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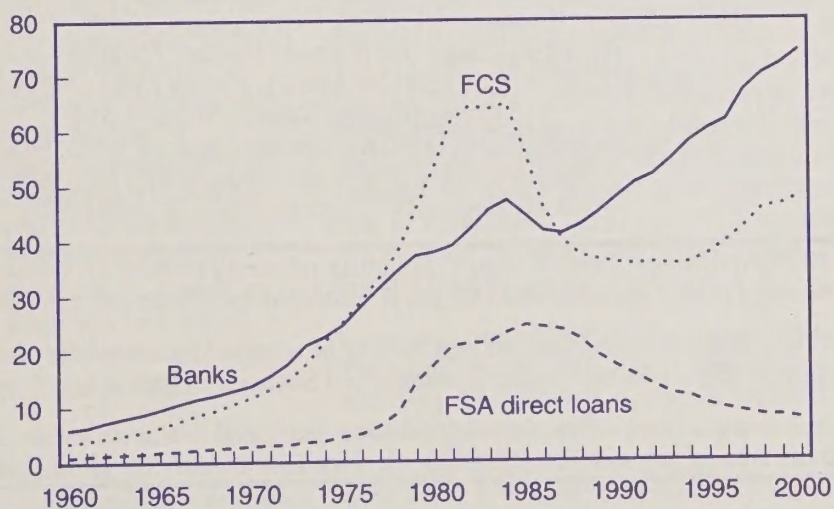
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Agricultural Income and Finance

Situation and Outlook Report

Total farm business debt held by commercial banks,
the Farm Credit System, and the Farm Service Agency

\$ billion



Annual Lender Issue

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Demand for Farm Credit Moderates, and Farm Lenders Continue To Show Caution

Major farm lenders continue to experience very low levels of farm loan problems in part because of sizable government farm payments to producers.

Financial institutions serving agriculture continued to experience improved conditions in 2000, and further gains are expected in 2001. Farm financial conditions remain stable because of large government payments to farmers and greater off-farm income. Generally favorable conditions experienced by farmers during 1990-98 helped strengthen the financial condition of most farm lenders. But net cash farm income, which measures cash available from sales after paying cash operating costs, declined from an annual average of \$58.1 billion in the favorable years of 1996-97 to \$55.5 billion in 1999-2000, even with sizable government assistance. Net cash income was \$54.6 billion in 1999 and is expected to be the fourth highest on record at \$56.4 billion in 2000. But farm sector challenges persist.

Continued low prices for many key agricultural commodities and weather problems in some regions have generated concerns about the ability of farmers to repay new or existing loans. Many of the concerns focus on producers' ability to obtain and retain production credit. In 2001, farm lenders will be dealing with a clientele whose net cash income performance is forecast to decline 10.1 percent or \$5.7 billion, some \$4.1 billion below the 1990-2000 average of \$54.8 billion, assuming no additional government assistance. While the national picture appears secure, regional and sectoral problems exist. The impacts of this decline in income will not be evenly distributed across all U.S. farm operations.

Low commodity prices continue to depress farm operating incomes, but widespread effects on farm lenders have yet to materialize. The position of agricultural lenders reflects the generally healthy state of farmers' finances in recent years. All major institutional lender groups except the Farm Service Agency (FSA) continue to experience historically low levels of delinquencies, foreclosures, net loan chargeoffs, and loan restructurings. These aggregate farm lender indicators will remain favorable barring a sustained increase in farm financial stress. The duration of the current commodity price declines remains unknown, but there is little indication of a problem in the national farm lender performance data to date. However, there will be a lag before any significant farm financial stress would appear in the national data.

Total farm business debt at yearend 2000 is estimated at \$180.6 billion, up 2.4 percent after increasing 2.1 percent in 1999. The dollar volume of farm loans outstanding increased for all lender categories, except the FSA. Farm loan volume held by commercial banks and the Farm Credit System (FCS) increased 3.3 and 3 percent, respectively. Together, commercial banks and the FCS held 67.4 percent of all farm debt at the end of 2000. Commercial banks have gained farm debt market share for 14 of the past 16 years and now hold 41 percent of outstanding farm business debt. FCS market share during the same span dropped for 9 of 10 years

before increasing 5 of the 6 years during 1995-2000 to 26.4 percent.

The expected 1.2-percent increase in farm business debt in calendar 2001 will be the ninth consecutive increase. Nonreal estate loans are forecast to increase about 1.2 percent compared with 1.3 percent growth in 2000. Real estate loans are expected to increase about 1.3 percent compared with a gain of 3.3 percent in 2000. Commercial bank total farm loans are projected to increase 1.8 percent, while the FCS' total farm lending is expected to edge up only 0.3 percent. The expected increase in total debt of about \$2.2 billion during 2001 will follow a 1992-2000 expansion of \$41.4 billion or 29.9 percent. Some \$16.8 billion (40.4 percent) of this increase came in 1997-98, as farmers were optimistic following the planting flexibility allowed by the 1996 Farm Bill and the relatively high commodity prices of 1996-97. Farm debt at yearend 2000 was still 6.8 percent (\$13.2 billion) below its 1984 peak in nominal terms.

The outlook for 2001 indicates that loan demand will be moderate because commodity prices are expected to remain low, and weak export demand will persist. Farm operators and lenders learned during the farm financial crisis of the 1980's that ill-advised borrowing cannot substitute for adequate cash flow and profits. In addition to gains in farmland values, cautious borrowing has helped keep the farm sector balance sheet sound. Farm sector equity growth continues, but at a much slower pace than during the 1990's. The 2001 forecast of moderate increase in debt thus suggests modest levels of new capital investments financed by debt and a relatively low incidence of farms borrowing their way out of cash-flow problems. Adequate levels of working capital, emergency government support, and off-farm earnings are helping to hold down new borrowing. Expected 2001 price and income levels and uncertainty about export demand will cause farmers to be cautious concerning debt use. In fiscal 2001, farm exports are expected to rise to \$53 billion from the recent low of \$49 billion 2 years ago, but are still well below the 1996 peak.

Congress enacted four pieces of legislation between October 1998 and January 2000 that increased farm program spending. Government assistance has been important in stabilizing farm income, particularly for grain, soybean, and cotton farms. Total direct government payments to farmers were \$12.2 billion in 1998, \$20.6 billion in 1999, \$22.1 billion in 2000, and are projected at \$14.2 billion for 2001. Farmers received an annual average of \$8.8 billion in direct payments during 1990-97, but this increased to a yearly average of \$17.3 billion for 1998-2001. The 1998-2001 ongoing total expected direct payments of \$69.1 billion is reducing the demand for credit and helping maintain farmland values. Farmers have been maintaining or improving their balance sheets by applying some of their

additional government payments to existing debt. Actual changes in farm business debt both in 2000 and 2001 will depend heavily on the timing and extent to which farmers use these payments to reduce outstanding loan balances.

Agricultural lenders continue to be relatively cautious in extending agricultural credit, as the farm loan portfolio losses of the early to mid-1980's are a recent memory. Many lenders have moved to improved measures of 'repayment capacity' rather than cash flow alone to assess the ability of farmers to handle a given level of debt. Although the current situation does not merit the label of crisis, the persistence of low commodity prices in 2001 will aggravate cash-flow problems for farm businesses. About 24 percent of all farm businesses with annual gross sales of \$50,000 or more are forecast to have debt repayment problems in 2001, up from 20.5 percent the previous year. The Economic Research Service analysis shows that overall farmer use of net repayment capacity is forecast to rise to 64.7 percent in 2001, up from 59.5 percent in 2000 and 59.6 percent in 1999 (the latter two lowered because of the large Federal payments). Currently, the availability of funds is not the problem. In terms of the total supply of credit available to agriculture, farmers are not being turned away because of a lack of loanable funds. The current credit situation varies considerably by region, commodity, farm size, and farm type.

Despite low commodity prices, lenders appear confident about the majority of their farm customers given the level of Federal assistance and the amount of off-farm earnings. Most farmers are not as heavily leveraged as they were over a decade ago. Veteran lenders cite significant differences from the 1980's, including lower interest rates, more owner equity, better credit analysis and monitoring methods, and the financial health of their producers. Lenders thus will work with most of their customers to restructure debt and provide credit for operating expenses.

Interest rates on outstanding farm debt rose about 20 basis points (a basis point is 1/100 of 1 percent) from 1999 to 2000. Interest rates on new farm loans made in the fourth quarter of 2000 increased about 50 basis points from their 1999 fourth-quarter levels. The higher farm interest rates in 2000 reflected a tighter monetary policy by the Federal Reserve Board. The large cuts in interest rates by the Federal Reserve Board in January 2001 should result in lower interest rates in the farm sector in 2001. Total farm sector interest expenses are forecast to increase slightly in 2001 because of a lag in the lowering of interest rates on the existing portfolio and due to an increase in total farm debt.

Agricultural banks remained very profitable through the middle of 2000. Their annualized rate of return on assets was 1.3 percent, even higher than their strong performance in recent years. At 13 percent, return on equity also increased from already strong levels. Nonperforming loans declined to 1.0 percent of total loans from 1.2 percent the prior June, and loan loss provisions were only 0.3 percent of total loans. These results indicate that problems in the farm sector have not seriously affected farm bank loan portfolios. Loan losses at agricultural banks may increase if farm sector problems persist over an extended period, but government assistance has helped farmers repay their loans, and the strong capital position of farm banks will allow most to

survive. No agricultural bank failed in 2000, and only five failed during 1994-99.

The average loan-to-deposit ratio for agricultural banks was nearly 76 percent on June 30, 2000, an increase of 4 percentage points from a year earlier and up from 57 percent at the end of 1992. In the current financial environment, commercial banks can easily access nondeposit sources of funds, and profitable, well-managed banks often have very high loan-to-deposit ratios. The Gramm-Leach-Bliley Act of 1999 provides most farm banks access to a stable source of long-term funds from the Federal Home Loan Bank System to supplement their traditional sources of loanable funds.

The financial condition of the FCS remains solid as it enters 2001. Both loan volume and at-risk capital continue to grow. Income has rebounded from last year's decline, fueled by a reduction in tax liability, improved portfolio quality, and a higher loan volume. The reduction in tax liability relates to favorable court rulings on previously taxed income from long-term mortgage lending through Agricultural Credit Associations and from restructuring many of these associations to eliminate this tax liability in the future. Loan portfolio quality is strong and has improved, with the exception of loans to cooperatives. Volume growth has supported the System's level of earnings, while net interest margins have declined. Retained earnings for the first 9 months of 1999 remained sufficient to raise the ratio of at-risk capital to assets. The Farm Credit Administration is pursuing an initiative to provide national charters to FCS direct lending associations.

Life insurance companies historically have been providers of mortgage credit to the farm sector. Among life insurance companies, total farm loans outstanding were up 2.8 percent in 2000. Approximately \$1.6 billion in new farm mortgage loans was closed in 2000, compared with \$2.5 billion in 1999. During 1981-92, total industry farm mortgage holdings actually declined in 8 of the 11 years for an overall drop of 27.9 percent, so the 1992-2000 increase totaling 34.7 percent over 8 consecutive years is significant. Life insurance companies report adequate funds for deals that meet their quality standards. Their farm lending is forecast to increase 2.4 percent in 2001.

FSA's presence in farm credit markets continued to shrink in 2000. Of the \$5.6 billion in FSA guaranteed and direct lending available for fiscal 2000, only \$3.7 billion was obligated. Direct lending volume fell significantly during the year, while guaranteed lending rose to record levels. Stabilizing farm financial conditions and Federal farm support help explain why FSA loan demand did not rise in 2000. For fiscal 2001, FSA has \$4 billion in lending authority, which should be sufficient to meet anticipated demand. The quality of direct and guaranteed loan portfolios improved significantly during fiscal 2000.

Farmer Mac purchased or guaranteed \$815 million in loans under its Farmer Mac I program during 2000, down from the \$1.2 billion recorded in 1999. Purchases of Farmer Mac II loans were up significantly on higher U.S. Department of Agriculture (USDA) guaranteed loan volume. Delinquent loan volume and contributions to loan loss reserves rose during the year.

Lenders Benefit from the Farm Sector's Receipt of Government Payments

Net cash farm income is estimated at \$56.4 billion in 2000, the fourth highest on record. But this level includes total direct government payments that added approximately \$22.1 billion of assistance to the agricultural sector. In 2001, net cash income is forecast to be \$50.7 billion.

The financial condition of agricultural lenders was stable in 2000 and no major decline is forecast for 2001. But each of the four major institutional farm lender categories—commercial banks, the Farm Credit System (FCS), the Farm Service Agency (FSA), and life insurance companies—face some unique challenges in dealing with today's farm sector.

Lenders Served a Farm Sector Continuing To Experience Low Commodity Prices in 2000

Generally favorable conditions experienced by the farm economy over the 1990-98 period contributed to the strengthening financial condition of farm lenders. But beginning in the latter half of 1998 a number of challenges emerged for farmers and their lenders. Net cash farm income, which measures cash available from sales after paying cash operating costs, was \$54.6 billion in 1999, and is expected to be \$56.4 billion in 2000. But in 2001, farm lenders will be dealing with a farm sector whose net cash income performance is forecast to decline 10.1 percent to \$50.7 billion, some \$4.1 billion below the 1990-2000 average of \$54.8 billion. Net farm income, which assesses the net value of calendar-year production, including the portion placed in storage, is forecast to increase from \$43.4 billion in 1999 to \$45.4 billion in 2000, but drop by 9 percent to \$41.3 billion for 2001. Net farm income forecast for 2001 is the lowest since 1995. The 1990-2000 average net farm income was \$45.3 billion.

Cash receipts from sales of farm commodities in 2000 totaled \$196 billion, up \$7.4 billion from 1999, with crop sales increasing \$3.5 billion and livestock sales growing \$4 billion. Cash receipts from farm marketings averaged \$185.8 billion for 1990-2000 and are forecast at \$200 billion in 2001. The value of farm production forecast for 2000 was exceeded in 1996-98 when a confluence of favorable harvests, prices, and exports occurred. Since the latter half of 1998, large worldwide harvests of major field crops and weak export markets have dampened market prices. Market prices for several crops have improved recently. Market receipts forecast at \$200 billion in 2001 would be a larger component of farm income than in 2000. Crop sales averaged \$94.4 billion in 1990-2000, compared with the 2001 forecast of \$100.2 billion. Livestock receipts averaged \$91.3 billion in 1990-2000 and are forecast at \$99.8 billion in 2001.

Much of the financial viability of the farm economy continues to rest on its sound balance sheet. The value of farm assets increased 54.7 percent from the low in 1986 to 2000 and now totals \$1.12 trillion. Farm equity increased 65.6 percent during the same period and was \$940.4 billion at the end of 2000. The value of farm assets should continue to increase in 2001, although at a modest rate (about 1

percent). Farm debt increased 2.4 percent in 2000 and is forecast to grow at 1.2 percent in 2001. Farm sector equity continues to grow, but at a much lower pace than in the 1990's (0.5-1 percent increase forecast in 2001).

Congress elected to address low farm commodity prices and weather problems affecting selected commodities with additional financial support in 1998 through 2000. Under the 1996 Farm Act, the farm sector received a combined total of \$15.9 billion in production flexibility payments (which replaced most commodity programs) in the three calendar years 1998-2000 and approximately \$4 billion in calendar 2001. The omnibus appropriations bill (P.L. 105-277), enacted in October 1998, included an additional \$5.8 billion in total assistance for agriculture, including \$5.4 billion in direct payments to the farm production sector for disaster and income support. The supplemental payments under P.L. 105-277 added to previously authorized production flexibility payments and larger loan deficiency payments due to falling prices for major field crops substantially boosted Federal assistance to the farm sector. About \$2.8 billion in additional government direct payments (mostly marketing loss payments) for 1998 and another \$2.8 billion (mostly from disaster payments) for 1999 were distributed to farmers because of P.L. 105-277. The Agriculture Appropriations Act (P.L. 106-78) signed into law in October 1999 contained emergency farm assistance for fiscal 2000 of an additional \$8.7 billion. Also, P.L. 106-113, enacted in November 1999, added \$186 million in production loss payments and \$10 million to livestock producers.

The Agricultural Risk Protection Act (P.L. 106-224) was enacted on June 20, 2000, authorizing \$15.1 billion in additional Federal assistance to farmers. An estimated \$6.7 billion was in the form of direct payments to farmers, with \$6.3 billion disbursed in calendar 2000. Government payments during 1998-2000, with additional emergency assistance, have been sufficient to maintain net farm income near or above the 1990-99 average. In total, when added on to previous legislative authorities, the 2000 legislation brought the total direct payments for farmers in 2000 to \$22.1 billion and the payout is forecast at \$14.1 billion in 2001, down 36.2 percent, assuming no additional emergency government payments. The 1998-2001 payment of \$69.1 billion is helping reduce the demand for credit and maintain farmland values. Farmers received an annual average of \$8.8 billion in direct payments for the 1990-97 period, but this jumped to \$17.3 billion per year for 1998-2001. In real terms based on a gross domestic product chain-type index (1996=100), the direct payments received by farmers in 2000 of \$20.7 billion was second to the record year recorded in 1987 of \$21.5 billion.

The farm sector's aggregate financial indicators continued to show strength in 2000 largely due to generally favorable yields and sizable Government payments. Total farm business debt increased \$41.5 billion or 29.9 percent during 1992-2000, but this growth slowed in 1999-2000 (2.1 and 2.4 percent, respectively) compared with 1997-98 (6 and 4.6 percent, respectively). Total farm assets exceeded \$1.12 billion in 2000 as farm equity increased for the 14th straight year (or 65.6 percent during the span). The sector debt load relative to income is up slightly and the debt-to-asset ratio is steady. The total rate of return on assets has been in the 3.1-5.9 percent range since 1992.

Figure 1

Total farm business debt is approaching 1981 levels

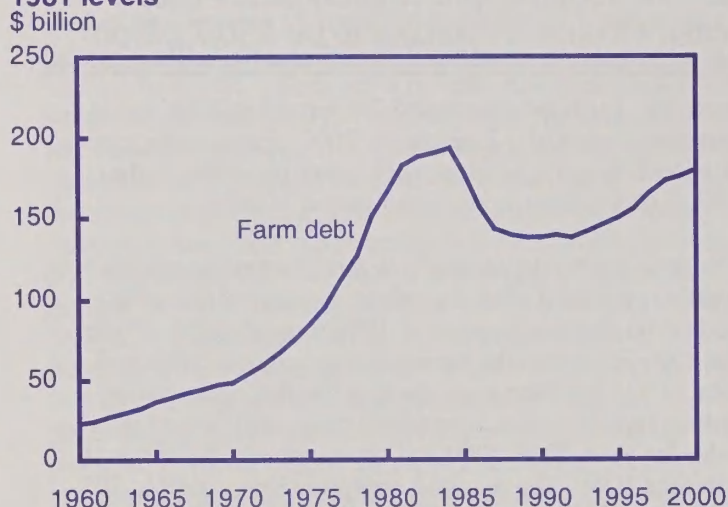


Figure 2

Annual change in farm debt positive since 1993

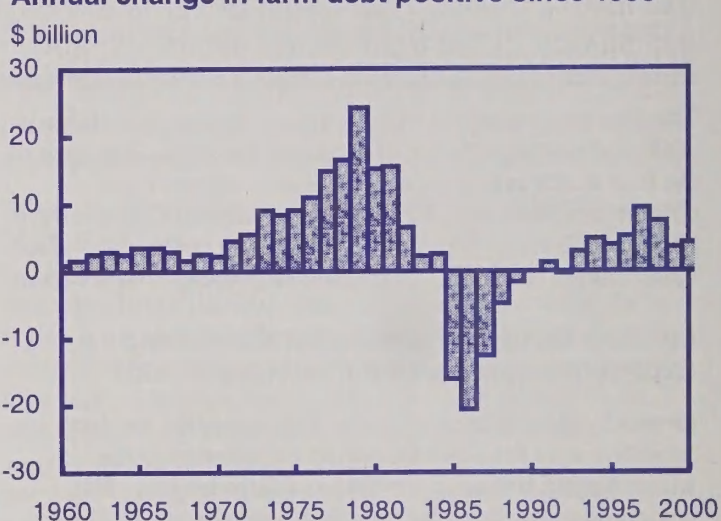


Figure 3

Farm sector balance sheet shows equity growth

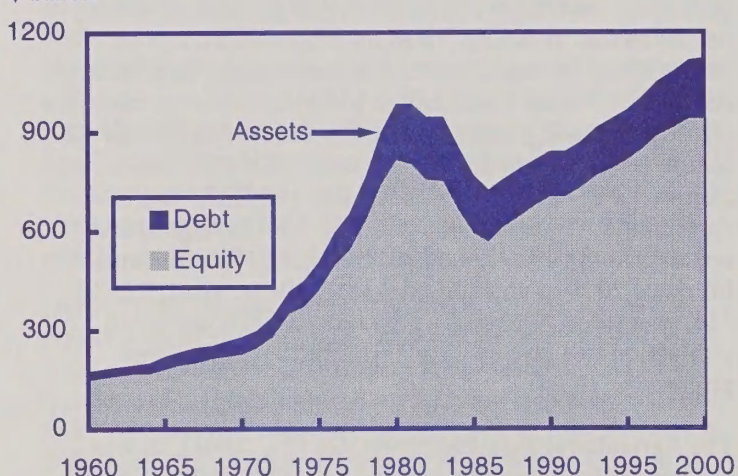


Figure 4

Farmers' debt load is just above 3 times their net cash income

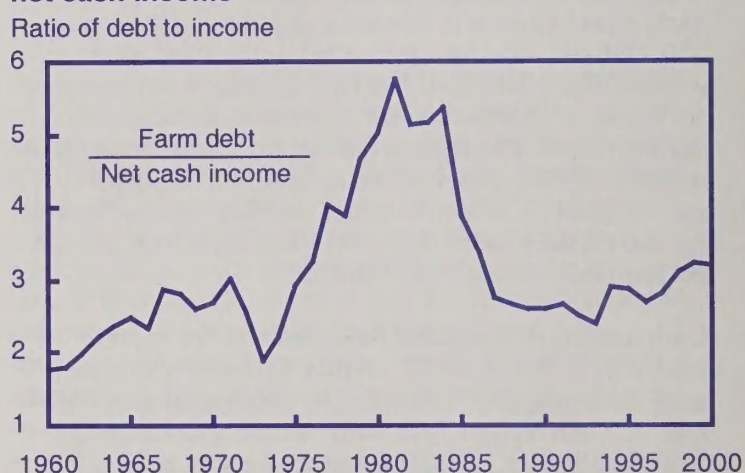


Figure 5

Real net farm and real net cash incomes increase slightly in 2000

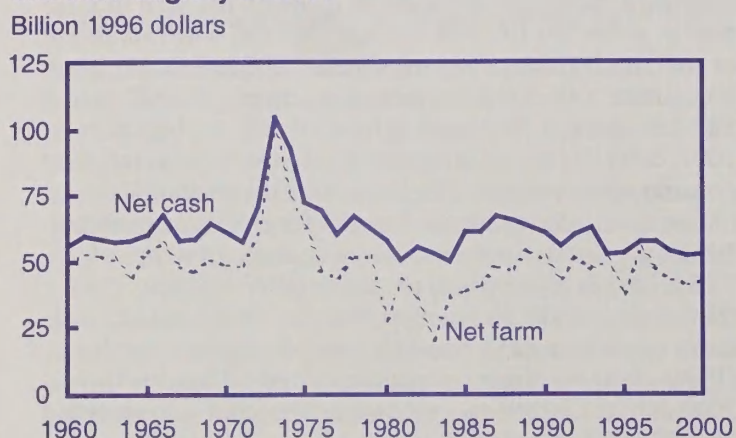
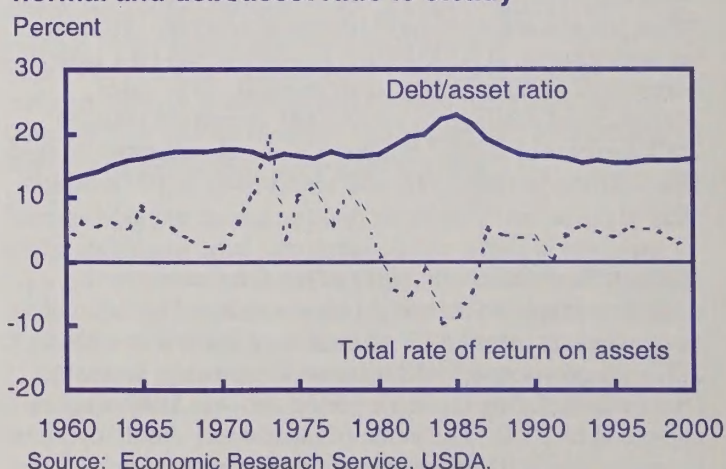


Figure 6

Farm sector rate of return on assets remains normal and debt/asset ratio is steady



Lenders' Financial Performance Strong

Farm lenders experienced another profitable year and entered 2001 in financially sound condition. Low commodity prices are hurting farm operating incomes, but widespread effects on farm lenders have yet to materialize because of sizable government payments.

The distribution of the farm sector's estimated \$180.6 billion in farm business debt among the six lender categories on December 31, 2000 is summarized in table 1. Commercial banks account for 41.3 percent of all farm debt outstanding, making them the leading agricultural lender, followed by the FCS with 26.1 percent. Individuals and others (merchant and dealer credit, land purchase credit contracts) held an estimated 22.2 percent, with the remaining categories holding lesser market shares.

Lenders' Financial Position Continues Strong

The position of commercial agricultural lenders in 2000 reflected the generally healthy state of farmers' finances in recent years. To date, borrowers from agricultural lenders have generally been able to withstand the low commodity prices and weather-related problems due to their previously strengthened financial positions and an increase in payments received from the Federal Government beginning in 1998. As a result, commercial farm lending institutions have been able to continue to build capital and maintain favorable credit quality levels in their loan portfolios. Commercial farm lenders have benefited from improved management, loan standards, and better regulator oversight compared with the 1980's. All major institutional lender groups except FSA (the government "lender of last resort") continued to experience historically low levels of delinquencies, foreclosures, net loan charge-offs, and loan restructuring (tables 2 and 3). Any farm financial stress must be sustained to make a significant impact on aggregate national farm lender indicators such as loan delinquency rates. Agricultural lender performance measures are lagging indicators of farm financial stress. Prices for several major farm commodities are forecast to remain near their 1998-2000 lows in 2001 and 2002, but there is no significant indication of a problem in the national farm lender performance data to date. The overall performance of farm lenders is vastly superior to that experienced during the farm financial crisis of the 1980's (app. table 6). In 1986, farm lenders held over \$3.7 billion in property due to loan defaults or foreclosures; in 2000 the amount was only \$188 million.

The financial health of the FCS and commercial banks remains strong. FCS net income through the third quarter of 2000 was \$1.048 billion, compared with \$934 million a year earlier. FCS net interest margin (spread on total investable funds) for the first 9 months of 2000 was 2.74 percentage points, slightly larger than a year earlier. The spread has remained at this level to above 3 percent since the first quarter of 1993, helping to maintain profits. The slight narrowing experienced in 2000 was the result of a 12 basis point decline in the net interest spread that was attributable to competitive loan pricing pressures for the 9 months ending September 30, 2000, compared with a year earlier.

Net interest income was \$1.782 billion for the 9 months ending September 30, 2000, compared with \$1.699 billion a year earlier. Total FCS capital increased to \$14.08 billion on September 30, 2000, up from \$13.1 billion a year earlier. Nonaccrual loans as a percentage of total loans outstanding increased from 1.23 percent on September 30, 1999, to 1.28 percent a year later. Much of the increase was attributable to a deterioration in the credit quality of the loan portfolio of a limited number of cooperatives. Nonperforming loans as a percentage of capital declined from 8.1 percent on September 30, 1999, to 7.95 percent a year later. During the first 9 months of 2000 the evidence indicated that the FCS overall credit quality was fairly stable.

Agricultural banks are also experiencing sound financial performance. Delinquent loans and charge-offs have declined over the past year for agricultural production loans. Agricultural banks reported high average returns on equity and assets for the 6 months ending June 30, 2000, and loan loss provisions of 0.3 percent in the first half of 2000 were consistent with an optimistic outlook regarding future loss rates. Surveys of farm banks found that while bankers were concerned about low farm prices, they wanted to work with their farmer borrowers and maintain relatively high rates of farm lending. No agricultural bank failed in 2000 and only five failed during 1994-99.

USDA's Farm Service Agency, the farm "lender of last resort," holds a direct loan portfolio that continued to improve during fiscal 2000. The volume of delinquent loan payments fell for the 12th consecutive year to \$1.2 billion. Outstanding direct loan volume also slipped as loan repayments and losses exceeded new lending activity. FSA's guaranteed loans also saw lower delinquency rates in 2000. Some 4.5 percent of the guaranteed loan program borrowers are now late with their payments, down from 5.9 percent in 1999. The guaranteed loan delinquency rate at the start of fiscal 2001 was about average for the past 15 years. Modest loan interest rates, large Federal payments, and stable farmland prices have helped to maintain the creditworthiness of many FSA borrowers.

The agricultural situation currently facing lenders differs from that of the early to mid-1980's in that the problem is widespread low prices rather than overextended farm borrowers. For example, the ratio of farm debt to net cash farm income was only 3.2 in 2000, compared with the high of 5.8 in 1981. The increase in farm debt in recent years has been restrained compared with the 1970's, with only a 31-percent increase during 1990-2000 compared with a 242-percent increase during 1970-80. FSA's direct farm loans outstanding as a share of total farm sector debt have dropped from a high of 16.3 percent in 1987 to 4.1 percent in 2000 as many financially vulnerable farmers retired or otherwise left the sector.

Farm lenders have undergone considerable restructuring and consolidation since 1980, and have thus spread their risk over a more diversified and geographically dispersed borrower clientele. Farm lenders also learned the risks of lending on the basis of collateral in the 1980's and have instituted better loan analysis tools based on cash flow and other criteria. Farm lender regulation is much improved over the 1970's. In a nutshell, most financial problems faced by producers during the 1998-2000 period were caused by a combination of low prices and poor weather conditions. Lenders likely will find that these farmers will not gain much relief in the form of higher commodity prices in 2001. With market prices for most farm commodities mired in a deep slump, some erosion in agriculture's financial foundation is under way. Recent farm assistance packages, which included supplemental aid, disaster assistance, and greater subsidies for crop insurance, are shoring up farmer loan repayments to lenders and are

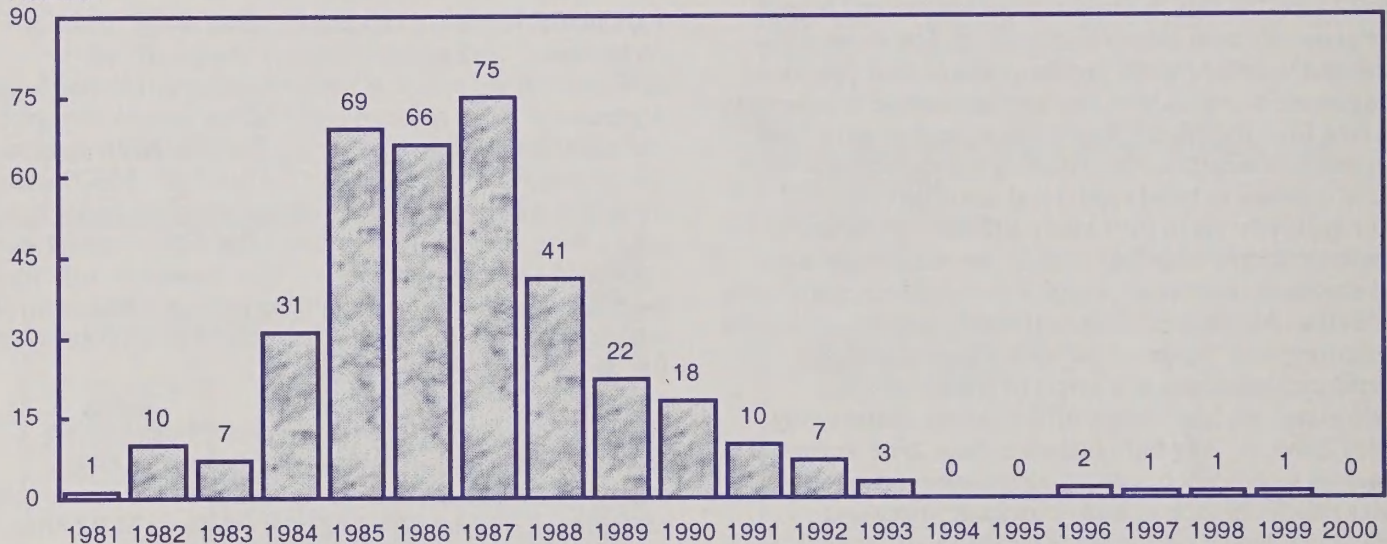
shoring up farmland values that provide collateral for many agricultural loans.

The collapse of farm prices since 1998 has led to a concern that the farm-program safety net provided by the 1996 legislation is inadequate. Despite the concern regarding the current farm program safety net, there is no consensus on what modifications should be made to the 1996 Farm Bill. If Congress passes an emergency aid package this year, that would be four consecutive farmer-relief packages (following emergency supplemental appropriations enacted in October 1998, October 1999, and June 2000). Many feel that relying on ad hoc assistance provided by annual emergency aid legislation is not in the best interests of producers or taxpayers. What is needed is for lenders, producers, and others to know how much farm income and other support will be provided by the government so they can plan for the future.

Figure 7

Agricultural bank failures, 1981-2000

Number

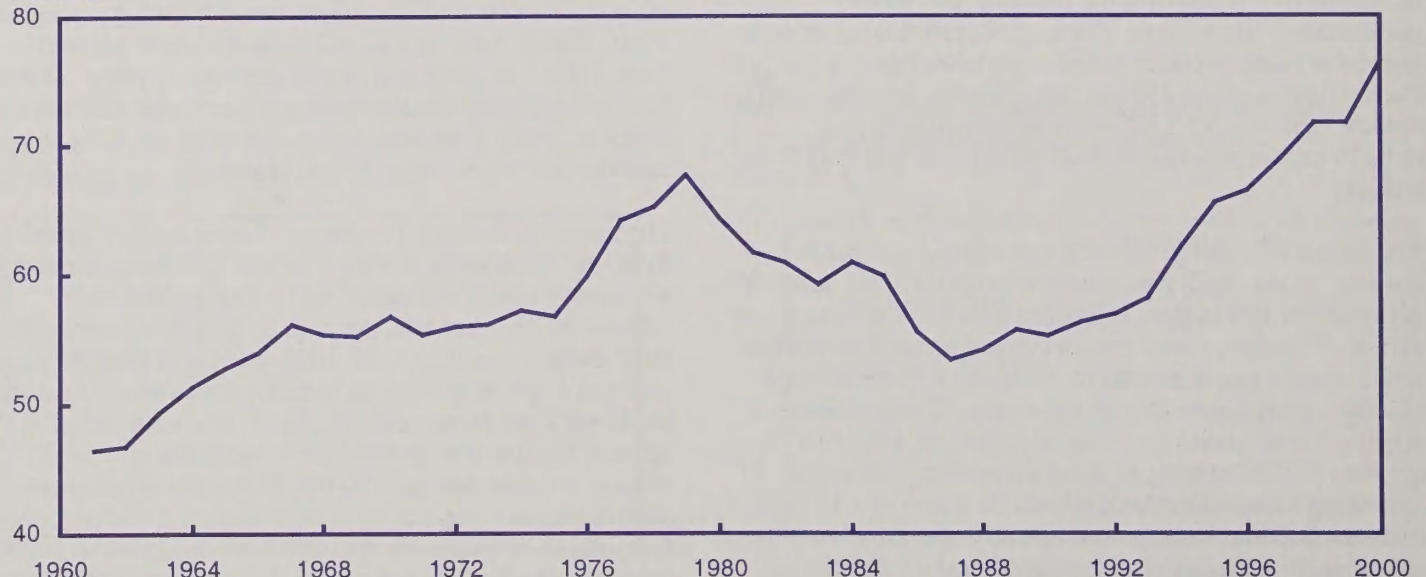


Source: Federal Deposit Insurance Corporation and Board of Governors of the Federal Reserve System.

Figure 8

Agricultural banks' aggregate loan-to-deposit ratio, June 1961-June 2000

Percent



Source: Board of Governors of the Federal Reserve System.

Table 1—Distribution of farm business debt, by lender, December 31, 2000 1/

Lender	Type of debt		Total
	Real estate	Nonreal estate	
	<i>Percentage of total</i>		
Commercial banks	17.9	23.4	41.3
Farm Credit System	17.4	8.7	26.1
Farm Service Agency	1.8	2.0	3.8
Life insurance companies	6.6	---	6.6
Individuals and others	10.2	12.0	22.2
Commodity Credit Corporation	0	---	2/
Total	53.9	46.1	100.0

1/ Preliminary. Due to rounding, subcategories may not add to totals. 2/ This excludes CCC crop loans, which are estimated at \$5 billion at the end of calendar 2000.

Table 2—Delinquent farm loan volume, by lender, 1991-2000

Lender	Yearend 1/									Midyear
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 2/
	<i>Billion dollars</i>									
Commercial banks 3/ 4/	0.7	0.7	0.6	0.5	0.5	0.6	0.5	0.6	0.7	0.7
Farm Credit System 5/	2.2	1.9	1.5	1.1	0.8	0.6	0.5	0.8	0.7	0.6
Life insurance companies 6/	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2
Farm Service Agency 7/	7.3	6.6	5.8	4.4	4.5	3.5	2.6	2.3	2.0	1.8
	<i>Percentage of outstanding loans</i>									
Commercial banks 3/ 4/	2.0	1.9	1.5	1.2	1.2	1.4	1.2	1.3	1.5	1.4
Farm Credit System 5/	5.4	4.6	3.6	2.7	1.8	1.3	1.1	1.5	1.3	1.2
Life insurance companies 6/	3.8	3.3	2.2	2.6	2.7	0.9	1.0	1.4	0.8	1.5
Farm Service Agency 7/	41.7	42.5	41.0	34.8	39.0	32.6	26.8	24.9	22.2	20.2

1/ End of fiscal year (Sept. 30) for the Farm Service Agency (FSA) and end of the calendar year (Dec. 31) for the other lenders. 2/ June 30 except for FSA. 3/ Delinquencies were reported by institutions holding most of the farm loans in this lender group. Data shown are computed just for these reporting banks. 4/ Farm nonreal estate loans past due 90 days or more or in nonaccrual status, from the Reports of Condition submitted by insured commercial banks. 5/ Data shown are nonaccrual loans, which include accrued interest receivable and exclude loans of the Banks for Cooperatives, Ag Credit Banks, and affiliated associations. 6/ Loans with interest in arrears more than 90 days. 7/ A loan is delinquent if a payment is more than 30 days past due. Data shown are for September 30; thus, they avoid the yearend seasonal peak in very short-term delinquencies and so are more comparable with those shown for other lenders. The FSA data reflect the total outstanding amount of the loans that are delinquent (as do the data shown for other lenders), rather than the smaller amount of delinquent payments that is often reported as FSA "delinquencies."

Table 3— Farm loan losses (net charge-offs), by lender, 1988-2000

Table 3— Farm loan losses (net charge-offs), by lender, 1988-2000									
Year	Commercial banks 1/		Farm Credit System 2/		Farm Service Agency 3/		Exhibit: Life insurance company foreclosures 4/		
Million dollars (Percent of loans outstanding at end of period) 5/									
1988	142	(0.5)	413	(0.8)	2,113	(8.4)	364	(4.0)	
1989	98	(0.3)	-5	(-0.0) 6/	3,297	(12.4)	204	(2.3)	
1990	56	(0.2)	21	(0.0) 6/	3,199	(13.5)	85	(0.9)	
1991	138	(0.4)	47	(0.1)	2,289	(10.4)	95	(1.0)	
1992	92	(0.3)	19	(0.0) 6/	1,887	(9.1)	148	(1.8)	
1993	60	(0.2)	-2	(-0.0) 6/	1,768	(9.4)	96	(1.1)	
1994	74	(0.2)	-26	(-0.1)	1,353	(7.5)	42	(0.5)	
1995	63	(0.2)	-5	(-0.0) 6/	1,041	(6.0)	73	(0.8)	
1996	109	(0.3)	48	(0.1)	1,344	(7.9)	82	(0.8)	
1997	78	(0.2)	27	(0.0) 6/	825	(5.0)	16	(0.2)	
1998	100	(0.2)	68	(0.1) 6/	735	(4.7)	27	(0.2)	
1999	144	(0.3)	172	(0.2)	586	(3.6)	9	(0.1)	
2000 7/	64	(0.1)	68	(0.1)	542	3.3	34	(0.3)	

1/ Calendar year data for nonreal estate loans, computed for those banks that must report this data. 2/ Calendar year data. 3/ Fiscal year data beginning October 1. Include data on the insured (direct) and guaranteed farm loan programs. FSA data are not directly comparable with commercial lenders because of some accounting differences. 4/ Loan charge-off data are not available for life insurance companies. 5/ Loan loss data rounded to nearest million dollars. 6/ Less than 0.05 percent. 7/ Commercial bank data through June 30, 2000, and Farm Credit System and life insurance company data through September 30, 2000.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, The Farm Credit Council, and the Farm Service Agency.

Farmers' Use of Repayment Capacity Continues To Rise

With reduced government payments, farmers' use of available credit lines are expected to increase substantially in 2001.

Direct government payments are expected to be \$22.1 billion in 2000, a number that is almost half of reported net farm income, and about 39 percent of net cash income. Anticipated to decline to \$14.1 billion in 2001, government payments will still represent 34 percent of net farm income and 28 percent of net cash income. Even with the apparent near-term cash flow constraints facing the sector, a strong basic financial position achieved during the 1990's will help farmers weather relatively low commodity prices over the near term.

Farm business debt is projected to rise 1.2 percent in 2001, following a 2.4-percent increase in 2000. Anecdotal evidence suggests that, given anticipated 2001 price and income levels, and uncertainty concerning the timing of price improvements in cash markets for many agricultural commodities, farmers are becoming more restrained in taking on new debt, while lenders are more conservative in extending credit. Despite this financial conservatism, farm debt continues to rise, with additional increases projected in 2001.

Government payments and the farm balance sheet

The rise in farm business debt has been facilitated by substantial recent government assistance to farmers. Government payments not only contribute to farm income, but also impact both asset and debt components of the farm balance sheet. The value of agricultural land depends largely on its expected future earnings, and a rise in available cash can impact the overall amount and composition of debt. Direct government payments are generally attached to the land, and accrue primarily to landowners, supporting farmland real estate values, and rising real estate values support higher mortgage loan levels. Payments also provide funds to facilitate the purchase of machinery, equipment, livestock, and other farm production assets, while also reducing the extent of debt financing of the purchase of capital assets.

Government payments further impact farm debt, since, depending on the timing of receipt of payments, farmers may require less credit to meet their seasonal production financing needs. More importantly, the generally counter-cyclical nature of government payments tend to stabilize income, minimizing the impact of catastrophic market losses, and reducing the risk faced by both farm operators and the lenders providing them credit. In some instances the additional funds from government payments can be used to pay down or eliminate existing debt commitments.

Government payments help farmers meet debt repayment obligations

Debt management is crucial during periods of potentially decreasing farm incomes. Net cash income, which measures

the amount of funds available to meet expenses as they come due during the year, is forecast at \$50.7 billion for 2001. This represents a \$5.7-billion decline from \$56.4 billion in 2000 and would be \$4.1 billion below the 1990-2000 average of \$54.8 billion. This reduction in farm operator income translates into a potential rise in difficulty in meeting debt service obligations in 2001.

Farm debt repayment capacity use (DRCU—actual debt expressed as a percentage of maximum debt that could be repaid from current annual income) effectively measures the extent to which farmers are using their available lines of credit. DRCU is expected to rise from less than 60 percent in 2000 to almost 65 percent in 2001, its highest level since 1985. The rise in DRCU suggests that some farmers will place greater reliance on available credit lines in 2001, and may have a more difficult time meeting interest and principal payments on their outstanding debt.

Government payments have provided many farmers with the resources to meet repayment obligations that could have otherwise presented severe cash flow problems during the last few years. If net cash income had been reduced by farm operators' share of all government payments, DRCU could have reached about 80 percent in both 1999 and 2000, theoretically, and would remain above 79 percent in 2001.

Debt repayment capacity utilization (DRCU)

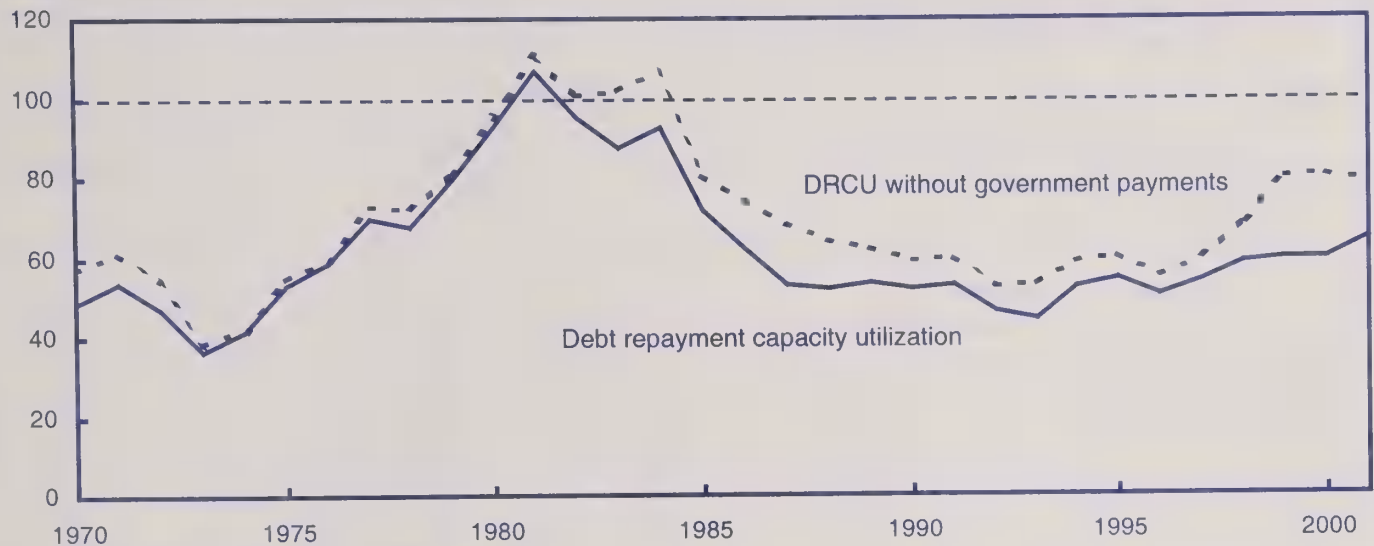
In applying a debt coverage ratio of, say, 1.25, lenders would effectively require that no more than 80 ($1 / 1.25$) percent of a loan applicant's available income be used for repayment of principal and interest. For farm operators, this income available for debt service (measured as net cash income plus interest) determines the maximum loan payment the farmer could make. Given current market interest rates and a predetermined repayment period, the maximum debt that the farmer could carry with this loan payment can be determined. Using current bank interest rates and a 7-year repayment period, maximum feasible debt conceptually measures the line of credit that could be available to farmers. Debt repayment capacity utilization is a measure of actual debt relative to this theoretical maximum feasible debt. For a more complete discussion of DRCU, including the equations used in its calculation, see:

http://www.ers.usda.gov/briefing/farmincome/Def_Drcu.htm

Figure 9

Government payments have helped farm operators meet debt service payments, 1970-2001F

Percent



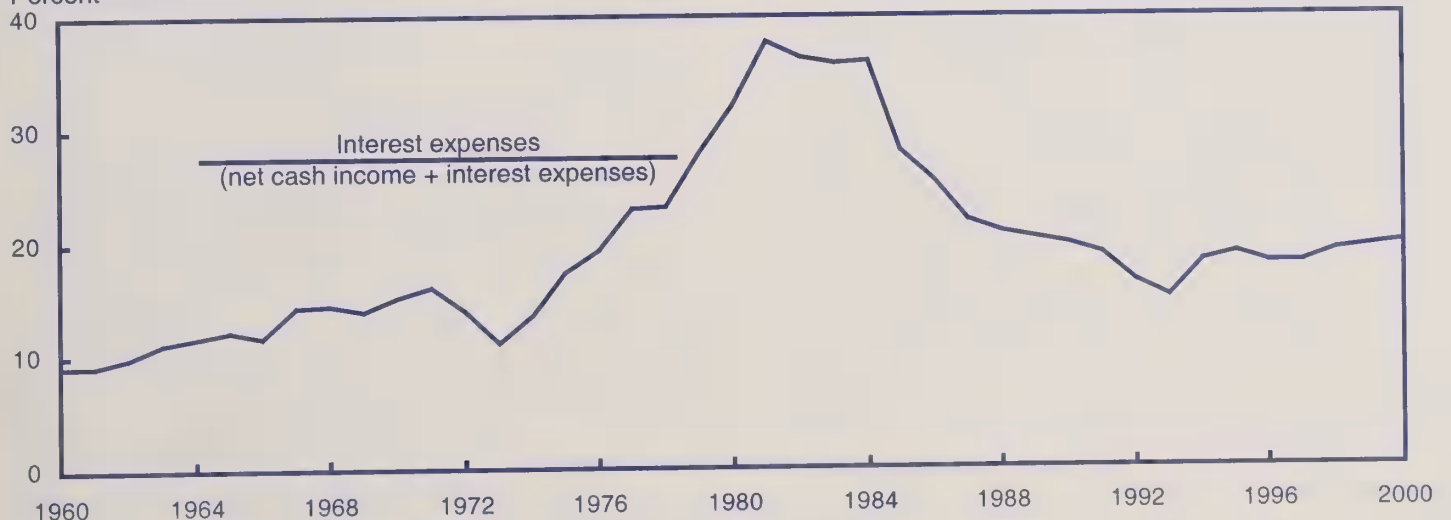
Values for 2000 and 2001 are forecasts.

Source: Economic Research Service, USDA.

Figure 10

Interest expenses as a share of net cash income, 1960-2000

Percent



Source: Economic Research Service, USDA.

Interest Rates on Agricultural Loans Increase in 2000

Despite expected lower economy-wide interest rates in 2001, total farm sector interest expenses (excluding households) are forecast to grow from \$13.8 billion in 2000 to \$14.3 billion in 2001. An anticipated 1.2-percent rise in total farm sector debt, accompanied by a lag in the lowering of interest rates on the existing farm loan portfolio, will contribute to the rise in interest expenses.

On January 31, 2001, the Federal Reserve Board's Federal Open Market Committee (FOMC) decided to lower its target for the federal funds rate by 50 basis points to 5-1/2 percent while the Board of Governors approved a 50 basis point reduction in the discount rate to 5 percent. These moves combined with an ad hoc 50 basis point cut in the Fed funds rate earlier in January reversed all the Federal Reserve's rate increases for 2000. This is the largest cut by the Federal Reserve in one calendar month since December 1991, when the Nation was emerging from a recession. The Fed suggests it remains open to further rate cuts if necessitated by a continued slowdown in U.S. economic growth.

The strong moves by the Federal Reserve should eventually result in lower interest rates in the farm sector in 2001. The full impact of these monetary actions will be felt within the farm sector over time rather than immediately. Most farm loans are variable or adjustable rate and thus will not reflect these lower interest costs until their next repricing interval. Following recent Federal Reserve moves, interest rates on new farm loans are expected to decline throughout 2001. These declines may even be larger than the increases in farm interest rates that occurred in 2000, if demand for credit is weaker. This should come as welcome news for a farm sector anticipating increased borrowing in 2001 in order to offset low, although improving, prices for most commodities and uncertainty regarding the magnitude of government emergency payments.

Interest rates on both real and nonreal estate farm loans increased in 2000. Interest rates on outstanding nonreal estate and real estate debt rose about 20 basis points (a basis point is 1/100 of 1 percent) from 1999 to 2000. Interest rates on new farm nonreal estate loans made in the fourth quarter of 2000 were almost 100 basis points higher than their fourth quarter 1999 levels. Interest rates on real estate farm loans were less volatile, increasing less than 50 basis points from the fourth quarter of 1999 to the fourth quarter of 2000. The higher farm interest rates in 2000 reflected a tighter monetary policy by the Fed.

The agricultural economy improved in the fourth quarter of 2000, as commodity prices improved despite relatively high production levels. Government payments boosted farm

incomes and supported modestly rising land prices.

According to the Federal Reserve Bank of Minneapolis, farmers in the Upper Midwest made more loan repayments and extended or renewed fewer loans. The proportion of Upper Midwest farm borrowers at their loan limit decreased 5 percentage points from last year. Collateral levels remain about normal. However, dairy farmers have been hurt by higher interest costs and lower milk prices. Nationally, demand for short-term and most intermediate-term loans is growing moderately, with nonreal estate debt forecast to increase about 1.2 percent in 2001. Real estate lending is forecast to expand a bit more rapidly than nonreal estate lending in 2001.

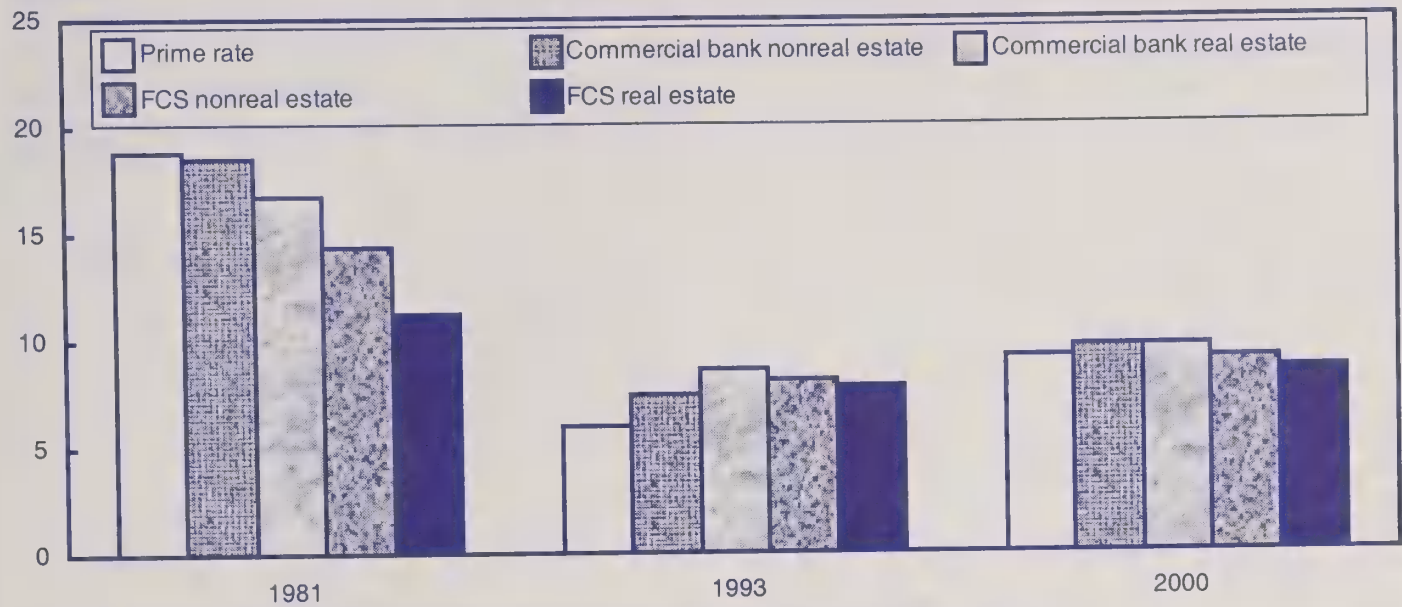
Interest rates on variable rate loans increased more than fixed rate loans. The fixed-rate premium (the difference between rates charged on fixed and variable rate loans) for Upper Midwest agricultural loans has declined from about 10-20 basis points in the fourth quarter of 1999 to practically zero in the fourth quarter of 2000. The fixed-rate premium for agricultural banks in the Southwest declined from 10 or fewer basis points to a negative premium over the same period.

It is important to consider how the ongoing *interest rate changes* will translate into *changes in total farm sector interest expenses* in 2001. Recent interest rate reductions by the Federal Reserve Bank suggest that a more favorable interest rate environment for farm borrowers will exist in 2001. But the declines in interest rates are occurring at the same time total farm debt is increasing. Farm debt grew \$4.15 billion in 2000 and is forecast to expand another \$2.2 billion in 2001. Interest paid on outstanding debt and rates on existing loans will not be immediately reduced to reflect changes in current market interest rates because a sizable portion are longer term loans. While about two-thirds of bank nonreal estate loans made in 2000 were variable rate loans, these loans adjust at regularly scheduled dates and lag the Federal Reserve rate changes. Thus, total farm sector *interest expenses* (excluding households) increased 3.2 percent in 2000 to \$13.8 billion. In 2001, total sector *interest expenses* are forecast to increase about 3.5 percent to about \$14.3 billion.

Figure 11

Selected interest rates, selected years

Percent

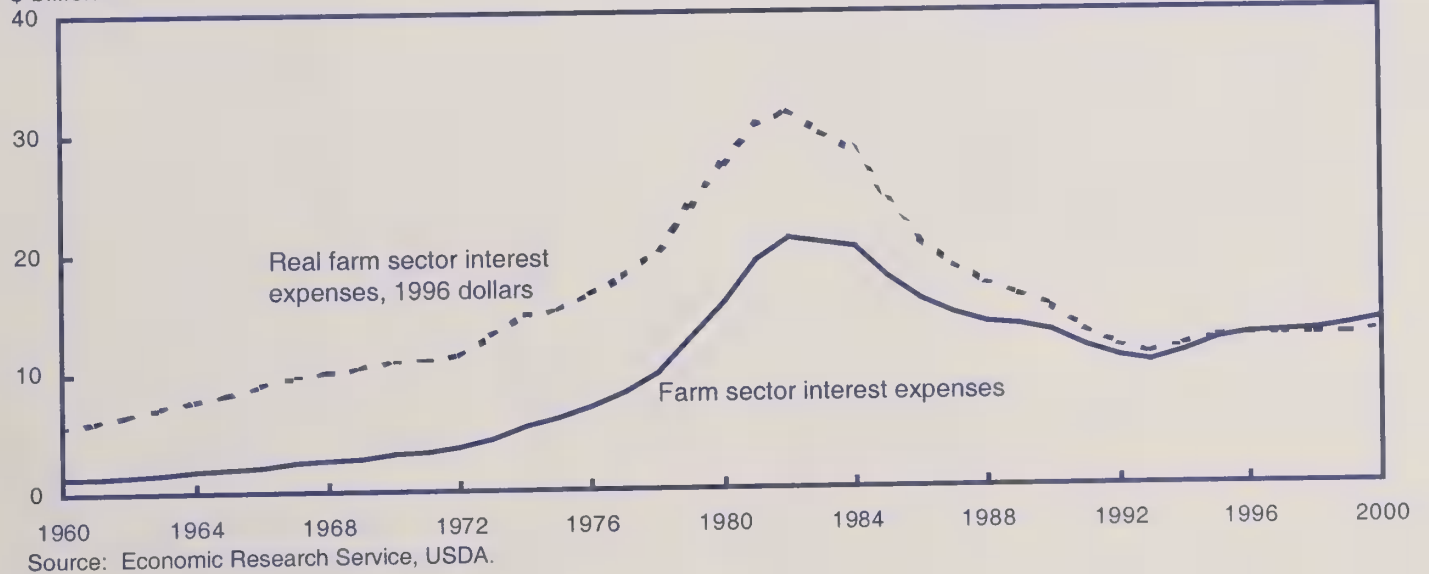


Source: Board of Governors of the Federal Reserve System and various Farm Credit District Banks.

Figure 12

Farm sector interest expenses, 1960-2000

\$ billion



Source: Economic Research Service, USDA.

Agricultural Banks Remain Highly Profitable

Problems in the farm sector are not reflected in aggregate data for farm banks.

Agricultural banks remained very profitable through the middle of 2000. Low loan loss provisions and large interest rate spreads supported large profits for agricultural lenders. An annualized mid-2000 rate of return on assets (ROA) of 1.3 percent is slightly higher than it has been since 1992, and return on equity capital (ROE) rose to 13 percent (table 6).

Continued strength in ROA reflects substantial quality in farm bank loan portfolios. Loans in nonperforming status at midyear were 1.0 percent of total loans, above the average of 0.8 percent for small nonagricultural banks but about the same as agricultural bank values of recent years (table 4). As measured by ROA and loan quality, agricultural bank performance was similar to that of the small nonagricultural banks to which they are often compared. ROE for small nonagricultural banks exceeded the midyear ROE for agricultural banks, but their ROA was the same. Agricultural banks maintained high average capital-to-asset ratios during 2000. These ratios help explain why, on average, agricultural banks had the same ROA but a smaller ROE than small nonagricultural banks.

Agricultural banks' loan-to-deposit ratios averaged 76 percent in June 2000, compared with 78 percent at small nonagricultural banks and 96 at large nonagricultural banks. While loan ratios typically decline between June and December at agricultural banks as farmers repay their loans, 76 percent is high by historical standards. Because this is an average, higher loan ratios at some farm banks may lead their managers to consider slowing lending activity. However, surveys conducted by several Federal Reserve District Banks suggest that most agricultural banks are comfortable with their current loan ratios. These surveys demonstrate that bankers are aware of the effects of low commodity prices on their farmer customers, noting that loan repayment rates were dropping. But the bankers expressed a willingness to extend additional farm credit and to work with their borrowers to get past problems caused by low prices.

What is an Agricultural Bank?

The Board of Governors of the Federal Reserve System (FRB) classifies a bank as agricultural if its ratio of farm loans to total loans exceeds the unweighted average of the ratio at all banks on a given date—15.39 percent on June 30, 2000, (table 5). The Federal Deposit Insurance Corporation (FDIC) criterion is a constant 25-percent ratio of agricultural loans to total loans. Unless otherwise indicated, the FRB definition is used throughout this report. Most farm banks retain much larger agricultural shares in their loan portfolios and therefore remain sensitive to conditions in the agricultural sector of the economy. Farm loans averaged

about 34 percent of total loans at all farm banks in 2000, and reached 46 percent for farm banks with below \$25 million in assets (table 7).

The dollar amount of farm loans outstanding typically peaks in the summer and declines the rest of the year as production loans are paid down. Thus, the use of June data rather than end-of-year data in the last column of table 5 distorts recent trends in the number of agricultural banks. For the 6 months ending June 30, 2000, farm banks declined by only 37 to 2,842 using the FRB definition and decreased by 27 to 2,089 using the FDIC definition. Both definitions show much larger declines when comparing June 2000 to June 1999 (not shown in the table) with 100 fewer FRB farm banks and a drop of 164 in FDIC's count of agricultural banks. The trend toward fewer agricultural banks reflects an industry-wide drop in the number of commercial banks over the last decade due largely to mergers and some failures.

Farm Loan Quality Improves

With moderate and declining loan delinquencies and charge-offs, farm loan quality continued to look solid through the first half of 2000. About 1.4 percent of commercial bank agricultural production loans were delinquent as of June 2000 (table 2), down 0.4 percent from June 1999 (not shown). Net charge-offs of farm production loans totaled \$64 million on an annualized basis at all commercial banks in the first 6 months of 2000 (table 3), down from \$125 million in the first half of 1999 (not shown). However, recent charge-offs are negligible relative to outstanding loans and charge-offs observed during the farm crisis of the mid-1980's. Loan loss provisions were only 0.3 percent of outstanding loans for agricultural banks, reflecting management's continued positive outlook for future loss rates (table 6).

No agricultural bank failed in 2000, compared with one each in 1997-99 (app. table 10). This reflects continued strength in farm bank loan quality and wide net interest margins, but also follows national trends of a very strong performance in the banking industry. Four nonagricultural banks failed in 2000, compared with two in 1998 and six in 1999. No agricultural banks and just four nonfarm banks had nonperforming loans exceeding their capital at midyear, the same as at the end of 1999 (app. table 9). Based on examinations by Federal regulators, the FDIC rated only 75 commercial banks (less than 1 percent of all banks) as problem institutions at the end of September 2000. This is within the range of 62-82 problem banks since December 1996. While the identity of these banks is not made public, even an increasing proportion of agricultural banks on the list would not signify widespread troubles for farm banks.

Strong profits and loan quality as well as low expectations for future loss rates allowed commercial banks to keep loan loss provisions low.

Table 4—Nonperforming loans as a percentage of total loans, by type of bank, 1992-2000 1/

Type of bank	1992	1993	1994	1995	1996	1997	1998	1999	2000 2/
	<i>Percent</i>								
Agricultural									
Total nonperforming 3/	1.4	1.2	1.0	1.0	1.1	1.0	1.1	1.0	1.0
Past due 90 days 4/	0.4	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.4
Nonaccrual	1.0	0.8	0.7	0.7	0.7	0.6	0.7	0.6	0.6
Small nonagricultural 5/									
Total nonperforming 3/	1.7	1.5	1.1	1.0	1.0	0.9	0.9	0.8	0.8
Past due 90 days 4/	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
Nonaccrual	1.3	1.1	0.8	0.7	0.7	0.6	0.6	0.5	0.5

1/ Data are weighted by bank asset size using June 30th balances. 2/ 2000 figures are for June 30; all others are December 31.

3/ Columns may not equal totals due to rounding. 4/ Still accruing interest. 5/ Banks with less than \$500 million in assets that were not agricultural by the Federal Reserve Board definition.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 5—Number of agricultural banks, by definition, 1992-2000 1/

Item	1992	1993	1994	1995	1996	1997	1998	1999	2000 2/
Commercial banks (Number)	11,401	10,916	10,401	9,892	9,476	9,080	8,703	8,502	8,394
FRB Agricultural banks (Number)	3,853	3,723	3,548	3,363	3,250	3,108	2,974	2,879	2,842
FRB farm loan ratio (Percent)	16.73	17.05	16.99	16.72	16.35	16.34	16.24	15.58	15.39
FDIC Agricultural banks (Number)	3,019	2,947	2,826	2,642	2,480	2,374	2,271	2,116	2,089

1/ Includes domestically chartered FDIC-insured commercial banks with non-zero deposits, assets, and loans. 2/ 2000 figures are for June 30; all others are December 31.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 6—Selected bank performance measures, by type of bank, 1992-2000 1/

Performance measure	1992	1993	1994	1995	1996	1997	1998	1999	2000 2/
	<i>Percent</i>								
Rate of return on equity capital									
Agricultural banks	13.0	12.8	12.0	11.9	11.8	12.1	11.8	11.9	13.1
Nonagricultural small banks	11.8	12.8	12.8	13.0	12.9	13.1	12.4	12.2	12.6
Rate of return on assets									
Agricultural banks	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3
Nonagricultural small banks	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.1	1.2
Provisions for loan losses as a percentage of loans									
Agricultural banks	0.5	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.3
Nonagricultural small banks	0.8	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.4
Capital as a percentage of assets									
Agricultural banks	10.4	10.9	10.8	11.3	11.1	11.4	11.2	10.8	11.0
Nonagricultural small banks	9.6	10.1	10.1	10.6	10.7	10.8	10.8	10.6	10.7

1/ Rate of return on equity is net income after taxes as a percentage of the average of total equity capital at the beginning and end of the year. Rate of return on total assets is net income after taxes as a percentage of total assets on December 31. 2/ 2000 ratios are June 30 data, annualized; all others are December 31.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Small Agricultural Banks are the Biggest Farm Lenders

Nonagricultural banks held 48 percent of all commercial bank farm loans.

Agricultural banks reported a \$1.5-billion increase to \$41.7 billion in the total value of their farm lending portfolios during June 1999-June 2000, compared with a \$700-million decline the previous year (table 7). A \$2.6-billion gain for nonagricultural banks left them with 48 percent of commercial bank farm loans, up slightly from the previous year. The increase in farm loans outstanding at agricultural banks is consistent with prior reports of increased carryover debt due to low farm prices. But it may also reflect increased farm loans by bankers who believe that continued Federal support payments in times of low prices will enable most farmers to remain current on their loans.

The largest nonagricultural banks (assets over \$500 million) hold over one-third of all commercial bank farm debt (table 7). With less than 14 percent of this debt, the other five nonagricultural bank classes slightly trail the combined market share held by the two smallest classes of agricultural banks.

Solvency Measures Look Good for All Bank Groups

Bank capital reduces the risk of bank failure by cushioning losses and supports liquidity by maintaining depositor confidence. Capital-to-asset ratios for midyear 2000 show that commercial banks—regardless of size—have sufficient capital to handle any reasonable projected loan losses (table 8). Small commercial banks had capital-to-asset ratios ranging from 11 to 16 percent, compared with close to 11 percent for the three largest bank categories. A narrower measure, the ratio of equity capital to assets, averaged 15 percent for the smallest banks, but only 8 percent for banks with assets above \$500 million. Large banks tend to be highly leveraged, with more loans outstanding per dollar of equity capital.

Lower loan-to-deposit ratios suggest that small commercial banks are more liquid than larger banks. However, nondeposit funding sources and secondary markets for loan sales have weakened the loan-to-deposit ratio's traditional role as a liquidity measure. Some banks hold more loans, resulting in higher loan-to-deposit ratios. Other banks reduce risk and their loan-to-deposit ratios by selling loans and acquiring securities instead. Large banks use nondeposit sources of loanable funds liberally, as witnessed by their much lower value of deposits as a percentage of liabilities (table 8). This ratio was about 70 percent for the largest banks, but 89 percent or more for all other size categories. However, small banks also have access to nondeposit funds, such as advances from the Federal Home

Loan Bank System. This may help to explain why small banks seem comfortable with higher loan-to-deposit ratios in recent years.

Largest Banks Most Profitable

Large banks lend a greater percentage of their asset base, but they used to earn lower rates of return on those assets (ROA) than did smaller banks. However, in the first part of 2000, the smallest banks easily registered the lowest ROA and the highest came from banks with \$300-\$500 million in assets. Large banks improved their profitability in part due to continued reductions in real estate loan problems. As of June 30, 2000, under 1 percent of big bank real estate loans were nonperforming (app. table 8), down slightly from a year earlier. Rate of return on equity (ROE) increased uniformly with bank size (table 9), helped by greater leverage in the larger banks.

The smallest banks, those with \$25 million or less in assets, include 698 agricultural banks and 420 nonagricultural banks (table 7). The smallest agricultural banks accounted for less than 5 percent of loans to agriculture held in the portfolios of commercial banks. Agricultural banks achieved an average annualized ROA of 1.3 percent and ROE of 13 percent. Agricultural banks with less than \$25 million in assets earned an ROA of almost 1.2 percent, compared with a loss of -0.7 percent for nonagricultural banks of that size class. These small nonfarm banks may be dominated by new banks which typically lose money their first few years.

Current Banking Issues

Bankers will monitor the effects of financial reform provided by the Gramm-Leach-Bliley Act of 1999 (GLB). This Act allows banking, insurance, and securities firms to merge their operations as affiliates of a financial holding company or as subsidiaries of a bank. GLB also permits most community banks to join the Federal Home Loan Bank System (FHLBS) and to use agriculture and small business loans as well as housing loans as collateral for FHLBS advances. Advances supplement deposits as a stable source of loanable funds. Regulations to implement this feature are still being devised. Many small bankers support a proposal to double the maximum account size protected by Federal deposit insurance to \$200,000 to reflect inflation since the limit was last raised in 1980. The bankers argue that this change would help them to attract and retain more loanable funds since fewer large depositors would need to find alternative safe outlets for their investment funds.

Agricultural banks with less than \$500 million in assets still hold 48.5 percent of outstanding bank farm loans, despite the declining number of agricultural banks.

Table 7—Agricultural lending from agricultural and nonagricultural banks, by bank size, June 30, 2000 1/

Total assets	Agricultural banks					Nonagricultural banks				
	Banks	Total ag loans	Avg. ag loans	Ag lending share 2/	Ag loans/total loans	Banks	Total ag loans	Avg. ag loans	Ag lending share 2/	Ag loans/total loans
<i>Million dollars</i>	<i>Number</i>	<i>---Million dollars---</i>		<i>-----Percent-----</i>		<i>Number</i>	<i>---Million dollars---</i>		<i>-----Percent-----</i>	
Under 25	698	3,193	4.6	4.0	46.1	420	144	0.3	0.2	3.9
25-50	884	7,954	9.0	9.9	40.8	871	818	0.9	1.0	4.0
50-100	782	12,510	16.0	15.5	36.3	1,326	2,181	1.6	2.7	3.6
100-300	417	12,906	30.9	16.0	30.9	1,887	5,803	3.1	7.2	2.8
300-500	38	2,458	64.7	3.1	25.3	396	2,106	5.3	2.6	2.1
Over 500	23	2,686	116.8	3.3	22.3	652	27,703	42.5	34.4	0.9
Total	2,842	41,707	14.7	51.8	33.5	5,552	38,755	7.0	48.2	1.1

1/ Figures are weighted within size class. 2/ This represents the percentage of total commercial bank agricultural loans held by this size group of banks.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 8—Selected commercial bank solvency and liquidity ratios, by bank size, June 30, 2000 1/

Total assets	Banks	<u>Capital</u> asset 2/	<u>Equity</u> asset	<u>Loan</u> deposit	<u>Loan</u> asset	<u>Deposit</u> liability
<i>Million dollars</i>	<i>Number</i>	<i>-----Percent-----</i>				
Under 25	1,118	15.8	14.8	68.8	56.5	96.5
25-50	1,755	12.1	11.2	71.9	60.8	95.2
50-100	2,108	10.9	10.1	75.0	63.3	93.8
100-300	2,304	10.3	9.1	78.4	65.2	91.8
300-500	434	10.7	9.4	82.1	65.9	88.9
Over 500	675	10.9	7.8	96.4	61.7	69.7
Total	8,394	10.9	8.1	93.3	62.1	72.6

1/ Weighted average within size class. 2/ Total capital includes equity capital, allowance for loan and lease losses, minority interest in consolidated subsidiaries, subordinated notes and debentures, and total mandatory convertible debt.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Table 9—Selected commercial bank profitability and efficiency measures, by bank size, June 30, 2000 1/

Total assets	Return on assets 2/	Return on equity 3/	Asset utilization 4/	Noninterest income to total income	Interest expense to total expense	Interest expense to interest income
<i>Million dollars</i>	<i>Percent</i>					
Under 25	0.47	3.15	8.21	12.96	42.08	42.40
25-50	1.00	8.92	8.09	8.86	50.32	44.61
50-100	1.18	11.72	8.43	10.82	51.53	45.17
100-300	1.21	12.97	8.51	11.58	51.76	44.87
300-500	1.44	14.85	9.70	23.38	46.08	45.35
Over 500	1.13	13.77	9.45	28.04	49.53	51.95
Total	1.14	13.55	9.35	26.30	49.59	50.94

1/ All ratios are on an annualized basis and weighted within class size. 2/ Rate of return on assets is net income after taxes as a percentage of total assets. 3/ Rate of return on equity is net income after taxes as a percentage of total equity. 4/ Asset utilization is gross income as a percentage of total assets.

Source: Calculated from the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Financially Strong Farm Credit System Maintains Profit, Capital, and Loan Growth

Farm Credit System maintains financial strength. The Farm Credit Administration focuses on national charters despite setbacks.

The financial condition of the Farm Credit System (FCS) remains solid as it enters 2001. During the first 9 months of 2000, loan volume, income, and at-risk capital all continued to improve from their year-earlier levels. Loan portfolio quality is strong, but some weakness is evident, particularly with respect to loans to farmer cooperatives. Volume growth, strong portfolio quality, stable net interest margins, favorable tax rulings, and lower provisions for loan losses have all contributed to growing earnings. Despite increased loan volume, retained earnings for the first 9 months of 2000 were sufficient to improve the ratio of at-risk capital to assets.

FCS loan volume continues to grow at a healthy pace (table 10). Overall FCS loan volume grew by over 4 percent during the first 9 months of 2000, with long-term real estate loans growing 4 percent, short- and intermediate-term loans growing nearly 6 percent, and loans to cooperatives or for their benefit (largely loans connected with international transactions) growing 3 percent.

Overall, credit quality remains solid and was improving through September 2000. Over the first 9 months of 2000, nonaccrual loans decreased from \$954 million to \$937 million. However, the percent of nonaccrual loans that are current on interest and principal payments decreased as well. Nonaccrual loans current as to principal and interest as a percentage of total nonaccrual loans decreased from 66 percent on December 31, 1999, to 45 percent on September 30, 2000. This decrease is primarily related to the poor performance of some loans to cooperatives.

FCS net income was accumulating at a rate of \$1.4 billion per year during the first 9 months of 2000 (table 11), 14 percent faster than in 1999. Net interest income increased due to higher loan and investment volume. Net interest rate spreads (the difference between the interest earned on earning assets and the interest paid on interest-bearing sources of funds) declined to 1.78 percentage points during the 9 months ending September 30, 2000, from 1.90 points a year earlier. Spreads declined primarily because yields on interest-bearing funds rose faster than rates charged on earning assets, especially loans. Net income also rose because of lower allowances for loan losses and because of favorable rulings on the taxation of income generated by long-term mortgage lending from Agricultural Credit Associations (ACAs).

Capital adequacy also remains strong. By September 30, 2000, FCS at-risk capital, including loss allowances and the FCS insurance fund, stood at \$16.0 billion or roughly 22 percent of loans outstanding (table 12). Combined surplus

capital and loss allowances are now 86 percent above the 1985 level of \$6.9 billion (not counting the \$1.6 billion balance of the FCS Insurance Fund), while the loans outstanding have increased just 4.5 percent.

Farm Credit Administration Seeks National Charters for FCS Associations

In July 1998, the board of directors of the Farm Credit Administration adopted a philosophy statement on intra-system competition that could lead to substantial changes in FCS structure and operations. In November 1998, the FCA published a proposed "customer choice" rule to allow eligible borrowers to obtain credit and financial services from FCS lenders of their choice regardless of the location of their residence or agricultural activity—effectively eliminating territorial restrictions on FCS lenders. In January 2000, after an extended comment period that exposed a deep division among FCS institutions and strong opposition from commercial banks, and the unexpected death of FCA's chairman, Marsha Pyle Martin, the FCA board of directors postponed action on the proposed rule.

In the aftermath of Martin's untimely death, the FCA withdrew the proposed "customer choice" rule, but reiterated its commitment to the earlier philosophy statement. In May 2000, the FCA issued a booklet on National Charters for FCS direct lending associations (Federal Land Credit Associations, Production Credit Associations, and Agricultural Credit Associations but not Federal Land Bank Associations). The FCA contended that the Farm Credit Act of 1971 as amended gives it broad authority to issue or amend FCS charters without formal rulemaking. However, because of public interests and concerns expressed by Congress and in a report from the General Accounting Office, the FCA is currently pursuing a formal rulemaking process.

National charters raise the prospect of public and private benefits as well as costs. Potential benefits include (1) enhancing the opportunity for FCS lenders to better diversify their loan portfolios geographically and, perhaps, by commodity, and (2) improving lender efficiency and market performance through more vigorous competition. Potential costs include (1) expansion of uneven competition between the FCS and lenders that are not Government-sponsored enterprises (GSEs) for purposes not contemplated by Congress, (2) pressure to pursue unsafe, unsound lending practice in more competitive environments, (3) risks to safety and soundness related to expansion into new areas or commodities that are not sufficiently well understood.

Table 10—Farm Credit System loan volume, by loan type, December 31, 1994-99, and September 30, 2000

Loan type	1994	1995	1996	1997	1998	1999	2000
<i>Billion dollars</i>							
Long-term real estate	28.40	28.43	29.60	30.66	32.98	34.19	35.55
Short and intermediate term	12.39	13.80	15.11	16.64	17.84	17.87	18.92
Loans to or for the benefit of cooperatives	13.89	16.36	16.47	16.14	17.08	17.94	18.49
Total	54.68	58.59	61.18	63.44	67.90	70.00	72.96

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement, and Farm Credit System Quarterly Information Statement, various dates.

Table 11—Farm Credit System income statement, December 31, 1994-99, and September 30, 2000

Item	1994	1995	1996	1997	1998	1999	2000 1/
<i>Billion dollars</i>							
Total interest income	4.68	5.59	5.78	5.94	6.12	6.14	6.92
Interest expense	-2.72	-3.57	-3.62	-3.75	-3.88	-3.87	-4.55
Net interest income	1.96	2.02	2.16	2.19	2.24	2.27	2.38
Provision/reversal for loan losses	-0.05	-0.04	-0.14	-0.09	-0.15	-0.18	-0.11
Loss/gain on other property	0.00	0.00	0.01	0.01	0.00	0.00	0.00
Other income	0.14	0.17	0.20	0.24	0.31	0.31	0.27
Other expense	-0.92 2/	-0.84 3/	-0.86	-0.90	-0.97	-1.00	-1.01
Debt repurchase	0.00	-0.01	0.00	0.00	0.00	0.00	0.00
Taxes	-0.13	-0.14	-0.17	-0.19	-0.18	-0.17	-0.13
Net income	1.01	1.17	1.20	1.27	1.25	1.23	1.40

1/ Annualized rate based on first three quarters' performance. 2/ Includes \$72 million in one-time merger implementation and restructuring costs. 3/ Includes \$6 million in one-time merger implementation and restructuring costs.

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement, and Farm Credit System Quarterly Information Statement, various dates.

Table 12—Farm Credit System financial indicators, December 31, 1994-99, and September 30, 2000

Item	1994	1995	1996	1997	1998	1999	2000
<i>Percent</i>							
At-risk capital/total loans 1/	19.06	19.42	20.22	21.15	21.15	21.70	21.98
Percent of loans in nonaccrual status or over 90 days past due	1.95	1.42	1.10	0.99	1.83	1.41	1.33
Other expense/total loans 2/	1.55	1.41	1.40	1.41	1.40	1.41	1.37 3/

1/ At-risk capital includes allowances for losses on acquired property and loans, surplus and unprotected borrower stock and participation certificates, and the FCS Insurance Fund. 2/ Excludes one-time merger implementation and restructuring costs. 3/ Annualized rate based on first three quarters' performance.

Sources: Federal Farm Credit Banks Funding Corporation, Farm Credit System Annual Information Statement, and Farm Credit System Quarterly Information Statement, various dates.

Changes in Income, Loan Volume, and Portfolio Quality Are Uneven Across Districts

Most districts experienced growth in loan volume, improved loan quality, and higher net income. CoBank suffers deterioration in its loan portfolio quality and at-risk capital ratio. Agricultural Credit Associations move to reduce their income tax liabilities.

FCS systemwide statistics hide differences in performance among FCS districts and entities. For example, aggregate nonaccrual loans increased 45 percent for the year ending September 30, 2000, reversing the year earlier's improvement. However, nonaccrual loan levels increased only at CoBank, while they decreased by at least 9 percent in the AgFirst, Texas, Wichita, and Western districts.

As in 1998, the brunt of the deterioration in loan quality was borne by the FCS bank with large lending exposure to agricultural cooperatives—CoBank, Agricultural Credit Bank (ACB). The 1998 deterioration was a major factor in the merger of the St. Paul Bank for Cooperatives into CoBank, ACB on July 1, 1999. In 1999, credit quality improved substantially at CoBank as it moved to clean up its portfolio and the portfolio it acquired with the St. Paul merger. In 2000, some loans to cooperatives deteriorated anew, at least in part because of unforeseen energy price increases.

Systemwide, at-risk capital continues to accumulate faster than loans outstanding. However, among the individual districts, at-risk capital is generally accumulating slower than total assets, with the exception of AgriBank. This paradox is explained primarily because systemwide at-risk capital includes the balance of the FCS Insurance Fund, but district-level at-risk capital does not include a prorated share of the Fund. At-risk capital measures all resources that can be liquidated without impairing bondholders. Such resources include unprotected borrower stock and allowances for losses on loans as well as surplus. The ratio of at-risk capital to total assets is a measure of the cushion between stockholders and bankruptcy. This ratio exceeded 17 percent for each district not engaged in lending to cooperatives. CoBank, ACB—the only remaining FCS lender to agricultural cooperatives—maintained a lower capital-to-asset ratio of 10 percent. Some FCS lenders have purchased Farmer Mac guarantees (see Farmer Mac section of this report) on portions of their farm mortgage portfolios. These guarantees reduce required capital, allowing lenders to operate both safely and legally with lower overall capital levels.

Systemwide net income before taxes and extraordinary items rose 12 percent from a year earlier for the 9 months ending September 30, 2000. The increase was unevenly distributed across FCS banks and districts (figure 9). Net income rose dramatically in the AgriBank and Wichita districts and at a healthy pace at CoBank. The increases at AgriBank and CoBank reflect, in part, lower provisions for loan losses compared with the year-earlier period. Other districts experienced only small changes from the year-earlier period.

CoBank remains the largest FCS Bank by loan volume (\$19.8 billion—table 13). The Wichita and Western districts both experienced the fastest loan growth, each gaining by 8 percent, compared with systemwide loan volume growth of 5 percent. The AgriBank district was the slowest growing with essentially no growth.

Agricultural Credit Associations Restructure To Lower Tax Liabilities

As noted above, FCS net income increased during the first 9 months of 2000 in part because of lower income taxes. The reduction in income taxation arose both from the ongoing restructurings of the ACA's and from the recognition of \$20 million of income associated with a settlement agreement with the IRS. The settlement agreement regards refunds of taxes paid by ACA's on their previous years of income generated through long-term mortgage lending. The ACA restructurings have resulted in lower effective tax rates on FCS income—without considering the one time recognition of income related to claimed refunds. For the 9 months ended September 30, 2000, effective tax rates fell to 8.2 percent from 11.2 percent for the year-earlier period. As additional ACA's restructure, the effective tax rate for the system should decline further.

While Congress declined to exempt ACA long-term mortgage lending income from taxation, such income is exempt if earned by a Federal Land Bank Association or a Federal Land Credit Association. Thus, ACA's may restructure if their stockholders and the FCA approve to operate their long-term mortgage lending activities through an FLCA subsidiary whose income would be exempt from taxation. Fifty-six of sixty-seven ACA's have restructured as of January 1, 2001, compared with sixteen at the end of the third quarter of 2000.

ACA's, which have been paying taxes on their long-term income, have also filed amended Federal tax returns requesting refunds of these taxes. The IRS sued to resolve these claims, and in September 1998, a Federal district court ruled that those earnings are exempt from taxation. While the IRS appealed this ruling, it also negotiated a model settlement agreement with one ACA in the AgriBank district. This agreement was finalized in the third quarter of 2000. It establishes that a portion of the claimed refunds are collectable with interest. The negotiating ACA and one other recognized income that totaled \$20 million. As other ACA's recognize income consistent with this model agreement, the future provisions for income taxes will be reduced.

Nonaccrual loans increase in the CoBank district, but fall elsewhere. Net income improves dramatically in the AgriBank, Wichita, and CoBank districts. Total at-risk capital increases in all districts but barely keeps pace with asset growth overall, and falls relative to assets in most districts.

Table 13—Farm Credit System district-level financial statistics, September 30, 1999-2000

	Total loans \$1,000	Nonaccrual loans \$1,000	Nonaccrual loans' share Percent	Net income before taxes and extraordinary items \$1,000	Total at-risk capital 1/ \$1,000	At-risk capital/ assets Percent
-----Nine months ending September 30, 2000-----						
AgAmerica	9,192,709	77,552	0.84	129,492	2,050,431	19.83
AgFirst	10,867,079	89,407	0.82	182,771	2,419,257	18.56
Agribank	17,980,323	294,942	1.64	274,286	4,055,671	18.43
Texas	5,213,717	62,631	1.20	66,913	1,189,154	21.44
Wichita	4,844,589	56,398	1.16	87,673	1,384,318	24.21
Western	6,737,119	25,816	0.38	84,662	1,375,282	17.25
CoBank, ACB	19,804,921	330,712	1.67	203,743	2,446,030	10.20
All Districts	74,940,457	937,458	1.25	1,030,764	14,925,986	16.85
-----Nine months ending September 30, 1999-----						
AgAmerica	8,602,709	79,830	0.93	131,445	1,924,034	19.95
AgFirst	10,467,127	98,431	0.94	180,897	2,330,353	18.45
Agribank	17,909,281	305,072	1.70	225,332	3,801,788	17.61
Texas	4,957,146	76,622	1.55	68,959	1,145,570	21.58
Wichita	4,467,535	80,940	1.81	72,998	1,296,682	24.21
Western	6,224,019	29,080	0.47	87,585	1,282,781	17.55
CoBank, ACB	18,575,320	186,629	1.00	180,258	2,317,081	10.44
All Districts	71,203,137	645,976	0.91	917,373	14,104,031	16.78
-----Percent change, September 30, 1999 to September 30, 2000-----						
AgAmerica	6.86	-2.85	-9.09	-1.49	6.57	-0.57
AgFirst	3.82	-9.17	-12.51	1.04	3.82	0.60
Agribank	0.40	-3.32	-3.70	21.73	6.68	4.66
Texas	5.18	-18.26	-22.28	-2.97	3.80	-0.69
Wichita	8.44	-30.32	-35.74	20.10	6.76	0.00
Western	8.24	-11.22	-17.99	-3.34	7.21	-1.72
CoBank, ACB	6.62	77.20	66.20	13.03	5.57	-2.35
All Districts	5.25	45.12	37.89	12.36	5.83	0.36

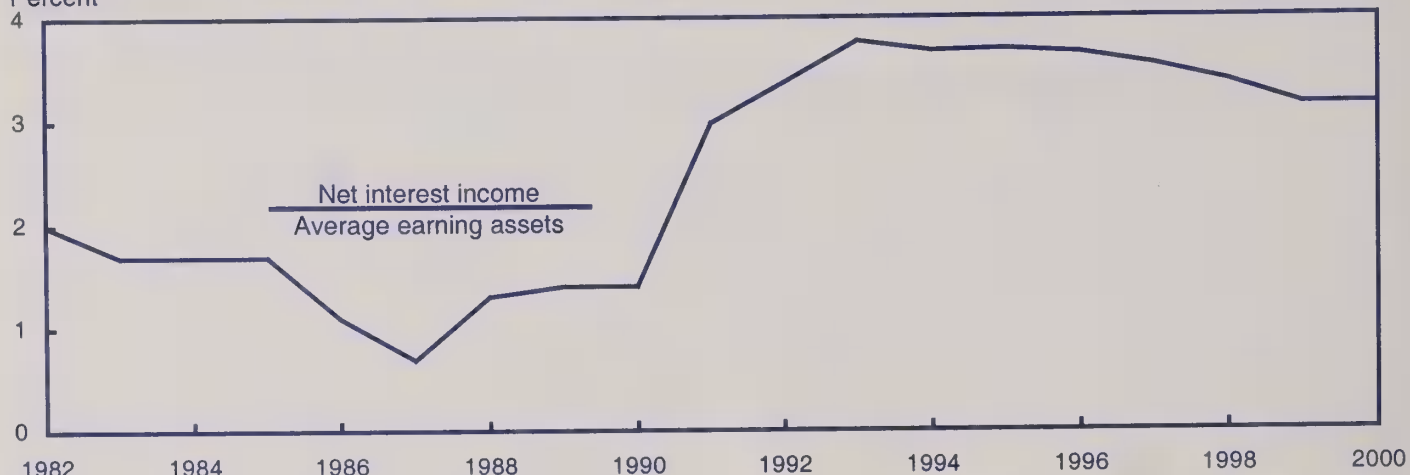
1/ Excludes expenses associated with early payment of Financial Assistance Corporation Bonds. 2/ At-risk capital includes allowances for losses on acquired property and loans, surplus, and unprotected borrower stock.

Source: Federal Farm Credit Banks Funding Corporation, Summary Report of Condition and Performance of the Farm Credit System, various dates.

Figure 13

Interest margins for Farm Credit Banks, 1982-2000*

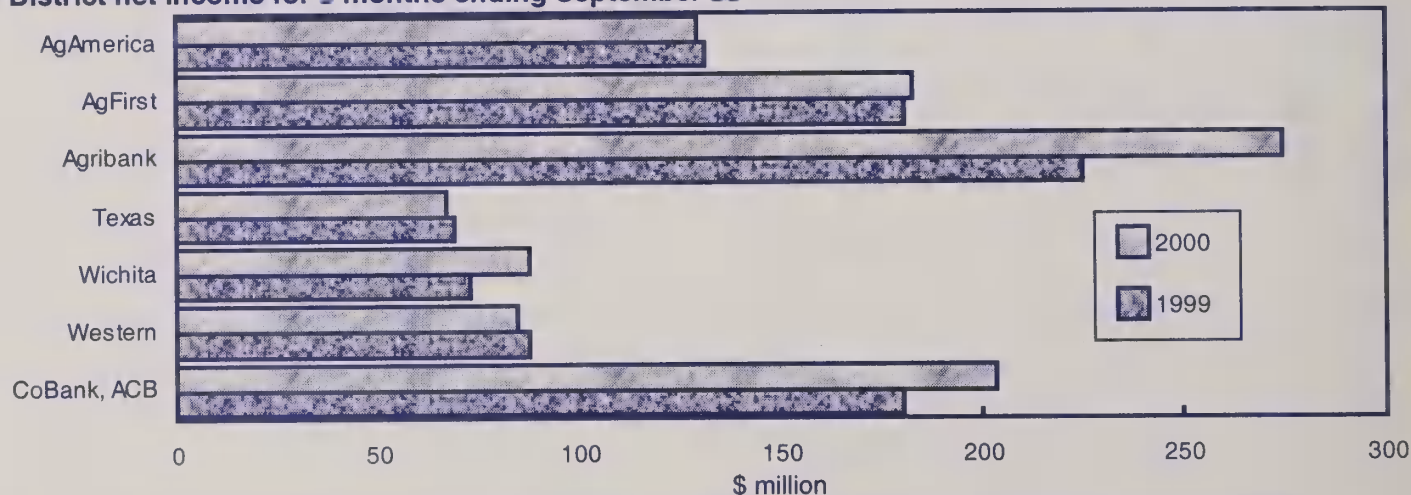
Percent



* Net interest income as a percentage of average earning assets. Average earning assets consist of gross loans plus cash and investments. Data represent combined totals for Farm Credit Banks and Associations, excluding those Associations affiliated with CoBank, ACB. Data for 2000 are through September 30.

Source: "Summary Report of Condition and Performance of the Farm Credit System," various dates, Federal Farm Credit Banks Funding Corporation, Jersey City, NJ.

Figure 14

District net income for 9 months ending September 30

Source: Federal Farm Credit Banks Funding Corporation, Summary Report of Condition and Performance of the Farm Credit System, various dates.

Life Insurance Companies' Farm Loan Portfolios Remain Strong

Life insurance companies closed new farm mortgage loans totaling approximately \$1.59 billion in 2000, down from \$2.5 billion in 1999. Loan demand is expected to be moderate in 2001 with life insurance company farm lending forecast to expand 2.4 percent.

Historically, agricultural real estate mortgages have been an important investment for life insurance companies, which have been a key source of farm real estate loan funds. On June 30, 2000, approximately 20 life insurance companies held 14,800 agricultural loans. During 2000, the quality of agricultural mortgage portfolios of life insurance companies remained high.

Low Delinquency and Foreclosure Rates

The agricultural loan delinquency rate based on dollar volume was 1.5 percent on June 30, 2000, up from 1.4 a year earlier. The June 30, 2000, nonagricultural rate was 0.3 percent (table 14). Agricultural mortgage delinquency rates continued at a low level in 2000. They were 2.9 percent as recently as June 1996 (the peak was 19.9 percent in June 1986) and the June 2000 1.5 percent level is below all post-1977 rates except for the very low rates experienced in 1996-99. During the 1991-97 period, the agricultural delinquency rate was generally lower than the nonagricultural rate both in number of loans and dollar volume. But beginning in 1998 in terms of dollar volume, agricultural loan delinquency rates exceed nonagricultural rates, although both are at low levels. Some \$182.5 million in life insurance company agricultural mortgage debt was delinquent on June 30, 2000, a modest level for the industry.

The share of agricultural mortgage loans based on dollar volume in the process of foreclosure stood at 0.3 percent on June 30, 2000. It was below the nonagricultural rate during 1990-98, but the June 30, 1999, quarterly report for the industry showed that it had moved slightly above the 0.2-percent nonagricultural foreclosure rate (table 15). The agricultural rates remain at the lowest levels since 1980. A total of \$35.4 million in life insurance company farm mortgage loans was in the process of foreclosure on June 30, 2000, down from \$89.8 million 5 years earlier. Agricultural mortgage loans in the process of foreclosure totaled 31 on June 30, 2000, down from 378 on December 31, 1990 and 50 on December 31, 1995.

The number and dollar amounts of agricultural loans actually foreclosed have generally declined since 1986. They are now running at levels on an annual basis comparable with 1978 and earlier. Agricultural mortgage loan foreclosures were \$26.7 million in 1998 and \$8.9 million in 1999, but only four worth \$34.4 million were recorded in the first 9 months of 2000 (table 16).

Important Trends Affect Lending

The life insurance industry's relationship with agriculture has changed rapidly in recent years. In spite of the changes, life insurance companies have been resilient lenders to the farm sector, occupying an important market segment. They held 12 percent of the farm mortgage debt (including operator households) at yearend 2000, which compares with

12 percent when the USDA data series began in 1910, and a high of 25.1 percent in 1955-56. Life insurance company outstanding farm loan portfolios have trended up since the end of 1992, gaining 34.7 percent by yearend 2000.

Approximately 20 companies now hold farm mortgages. The number of life insurance companies making new farm mortgage loans declined from 12 in 1980 to 6 in late 1996, with most departures occurring in 1986. The six companies (AEGON USA, Citigroup Investments AgriFinance, Lend Lease Agri-Business, Metropolitan Life, MONY Life Insurance, and Prudential) currently active in farm lending account for about 90 percent of the industry's farm mortgages and generally have high total assets and large farm mortgage portfolios. They have virtually pulled out of the small- to medium-sized farm mortgage market in favor of loans to agribusiness, timber, and specialty enterprises. These companies are emphasizing larger (\$500,000 or more) agricultural loans with an industry average of \$873,110 on September 30, 2000. The nominal average farm loan size increased almost 500 percent between 1980 and 2000.

Since 1980, the concentration of life insurance company farm mortgage holdings has shifted away from the Corn Belt to the Southeast and Pacific Coast farm production regions. The share of the industry's outstanding mortgage loan volume in the Corn Belt declined from 23.5 percent in 1980 to 12.0 percent in 1999, while the Pacific region's share increased from 19.3 percent to 41.1 percent. At 1998 yearend (based on the most recent State-level data), the Pacific region, Florida and Texas together accounted for 56.8 percent of total outstanding dollar volume of life insurance farm mortgages.

The life insurance industry's relationship with agriculture has grown more complicated in recent years with the direct acquisition of farmland in addition to expanding farm loan portfolios. Total loans held by life insurance companies (excluding households) at yearend 2000 are estimated at \$11.8 billion. The industry also now has sizable holdings of direct farmland investments.

Demand for New Loans To Be Moderate in 2001

There will be opportunities in 2001 for life insurance companies to make profitable farm mortgage loans, but the competition for the better-quality loans will continue to be keen, particularly from the FCS. Active companies continue to have sufficient loanable funds for qualified applicants and are aggressively competing on rate, terms, and loan-to-value ratio. It is expected that the demand for life insurance company farm loans will be moderate in 2001 with total loans outstanding expanding about 2.4 percent. The life insurance industry farm loan situation compared with other agricultural lenders will be tempered to a substantial degree because of the focus on larger farms and the amount of specialty crop and livestock loan activity.

Table 14—Life insurance company mortgage loan delinquencies, 1993-2000 1/

End of month		Rates by number of loans		Rates by amount	
		Nonagricultural mortgages	Agricultural mortgages	Nonagricultural mortgages	Agricultural mortgages
		<i>Percent</i>			
1993	June	2.78	3.47	6.23	4.06
	Dec.	2.84	1.99	4.48	2.21
1994	June	2.94	2.51	5.00	3.77
	Dec.	2.81	1.27	3.34	2.60
1995	June	2.67	1.67	3.53	2.85
	Dec.	2.51	1.14	3.43	2.72
1996	June	2.48	1.57	2.58	2.92
	Dec.	2.50	0.83	1.81	0.92
1997	June	2.66	0.96	1.57	0.94
	Dec.	2.13	0.69	0.92	0.97
1998	June	2.01	1.19	0.82	1.80
	Dec.	2.09	0.82	0.51	1.35
1999	June	1.63	1.27	0.33	1.39
	Dec.	1.54	0.89	0.27	0.84
2000	June	1.36	1.01	0.32	1.49

1/ Delinquent loans (including loans in the process of foreclosure). A delinquent loan is a nonfarm mortgage with interest payments in arrears at least 2 months (60 days if other than a monthly pay) or a farm loan with interest in arrears more than 90 days.

Table 15—Life insurance company mortgage loans in the process of foreclosure, 1993-2000 1/

End of month		Rates by number of loans		Rates by amount	
		Nonagricultural mortgages	Agricultural mortgages	Nonagricultural mortgages	Agricultural mortgages
		<i>Percent</i>			
1993	June	0.84	1.52	2.89	1.93
	Dec.	0.80	1.04	2.14	1.30
1994	June	0.82	0.97	2.46	1.04
	Dec.	0.82	0.68	1.77	1.11
1995	June	0.80	0.62	2.05	1.02
	Dec.	0.68	0.32	1.42	1.17
1996	June	0.70	0.42	1.52	1.26
	Dec.	0.66	0.30	1.09	0.32
1997	June	0.61	0.26	0.90	0.33
	Dec.	0.54	0.19	0.58	0.18
1998	June	0.53	0.25	0.46	0.20
	Dec.	0.50	0.22	0.32	0.24
1999	June	0.49	0.25	0.18	0.24
	Dec.	0.40	0.22	0.10	0.17
2000	June	0.39	0.21	0.20	0.29

1/ Reporting companies account for approximately 85 percent of the mortgages held by U.S. life insurance companies depending on the date of the survey. Loans in foreclosure include those on which foreclosure action has been authorized, including any involved in a subsequent filing of bankruptcy. Beginning in 1988, loans in the foreclosure category include loans in redemption period.

Table 16—Life insurance company mortgage loans foreclosed, 1987-2000 1/

Year	Nonagricultural mortgages		Agricultural mortgages	
	<i>Number</i>	<i>Thousand dollars</i>	<i>Number</i>	<i>Thousand dollars</i>
1987	2,048	1,580,027	1,515	691,914
1988	1,196	2,530,105	727	364,414
1989	1,098	2,178,949	356	204,361
1990	1,018	3,042,171	122	85,281
1991	1,284	4,942,349	125	94,875
1992	1,365	6,665,288	88	148,006
1993	1,159	6,013,084	79	96,318
1994	844	4,463,787	31	41,745
1995	640	3,055,039	21	73,258
1996	400	1,661,973	23	81,538
1997	285	1,373,452	14	15,949
1998	168	746,232	7	26,690
1999	113	538,652	3	8,908
2000 2/	43	144,044	0	0

1/ Loans foreclosed include those for which title to the property or entitling certificate was acquired during the period shown, either through foreclosure or voluntary conveyance in lieu of foreclosure. Dollar amounts include principal outstanding at the time of the foreclosure, amounts capitalized for interest, foreclosure costs, and any advances made to protect the collateral. 2/ January 1 through June 30.

Source: American Council of Life Insurance, Investment Bulletin: Mortgage Loan Portfolio Profile, various issues.

Farm Service Agency Loan Demand Fails To Meet Expectations

Farm loan program delinquencies fall significantly during the year.

Congress authorized over \$5.6 billion in guaranteed and direct loan program lending for fiscal 2000, but FSA obligated just \$3.7 billion, an amount less than was obligated in fiscal 1999 (table 17). All FSA farm loan programs had significant unobligated loan authority at yearend. Direct lending volume fell significantly during the year, with much of the decline resulting from a 50-percent decline in emergency lending volume. Yet, the \$2.7 billion in loans guaranteed by FSA was a record (table 18). Stabilizing farm financial conditions and Federal farm support helps explain why FSA loan demand did not rise in 2000. Direct FSA farm loans are made and serviced by FSA staff, whereas under loan guarantee programs, FSA reimburses private sector lenders for losses incurred on loans made and serviced by these lenders.

A portion of non emergency loan program funding has been reserved for use by socially disadvantaged (SDA) family farmers since 1988 and beginning farmers (those with 10 years or less experience owning or operating a farm) since 1994. An SDA farmer is one that may have been subject to racial, ethnic, or gender prejudice because of their identity as members of a group without regard to individual qualities. Overall, the volume of new loans to beginning farmers rose in fiscal 2000 by 4 percent to \$716 million. Lending to this group represented 44 percent of total direct farm ownership (FO) and operating loan (OL) obligations and 12 percent of guaranteed FO and OL obligations. The volume of loans made to beginning farmers under the (OL) programs fell during the year, but the decline was more than offset by a sharp rise in FO lending.

Lending volume to SDA borrowers fell 6 percent in fiscal 2000 to \$277 million. The decline was mostly due to a fall in direct OL lending to these borrowers. In fiscal 2000, 7.4 percent of FSA's total lending went to these borrowers.

Ample Funding Available for 2001

For fiscal 2001, \$4 billion in new FSA lending authority is available. Appropriations for 2001 provided \$3 billion in new lending authority, but FSA was able to carryover \$1 billion in unused fiscal 2000 authority. Through the first 4 months of the current fiscal year, it appears that the reduced funding levels will be sufficient to meet 2001 demand. The exception might be the direct FO program, which has less lending authority for fiscal 2001 than was obligated in fiscal 2000. Another possible funding shortfall could occur for guaranteed operating loans made with interest rate assistance. Demand for the program is very high because FSA pays for a 4-percentage point reduction in the borrowers' loan interest rate. The 2001 appropriations act gave FSA the authority to transfer funds between farm ownership and operating loan programs if funding shortfalls occur late in the year in a particular program.

In fiscal 2001, FSA will reserve 35 percent of direct OL and 70 percent of direct FO funding for beginning farmers use until September 1. Guaranteed loans are reserved in lesser amounts and released for general use after April 1 of each year. Late in the fiscal year, unused guaranteed OL authorities are transferred to direct FO beginning loan programs to meet the needs of these applicants. Targeting for SDA applicants is formula-based and the formula is unchanged for fiscal 2001.

Greater lending volume over the last 2 years resulted in a nearly 9-percent rise in outstanding guaranteed loan volume to \$8 billion. Reduced direct lending volume coupled with repayment activity reduced outstanding principal on direct loans to \$8.7 billion. Outstanding direct loan program volume has fallen every year since peaking at \$27.8 billion in fiscal 1986. It is possible that by the end of 2001, outstanding guaranteed loan volume could exceed direct loan program volume for the first time.

Delinquencies and Losses Fall

The quality of FSA's direct loan portfolio continued to improve in fiscal 2000, aided by high government payments and ongoing debt restructuring. The overall delinquency rate on direct loans fell to 13.6 percent, with declines in delinquency volume reported in all three loan programs (table 19). Delinquent direct loan payments have been cut in half in just 4 years and have now fallen for 12 consecutive years. Also, indicative of the improving financial condition of borrowers was a decline in the delinquency rates in the guaranteed loan portfolios. After trending up for 5 years, delinquent loan volume fell significantly in fiscal 2000.

Because of the higher obligation amounts, FSA's presence in farm credit markets in fiscal 2000 rose. Outstanding direct and guaranteed loan volume rose to \$16.6 billion at yearend, or about 9 percent of total U.S. farm debt. Total direct and guaranteed loan volume had been declining because new lending activity was not keeping pace with loan repayments and loan write-off volume. At the beginning of fiscal 2001, FSA had 98,000 direct program borrowers and 41,000 guaranteed program borrowers. Unique borrowers in both direct and guaranteed programs totaled 129,000.

Net loan write-offs (principal and delinquent accrued interest payments) on direct loans fell 9 percent to \$473 million and on guaranteed loans rose 2 percent to \$69 million. Losses on loans are heavily influenced by farm asset values, and so far relatively stable farmland prices have provided at least some equity available to repay loans that go into liquidation. FSA acquired fewer farms during fiscal 2000, a downward trend that has continued since fiscal 1991. FSA had less than 500 farms in inventory at fiscal yearend and many of these were under leaseback or buyback arrangements.

New Loan Programs Introduced

On May 30, 2000, USDA revived a Farm Storage Facility Loan Program. Storage facility loans were last made in the 1970's and 1980's. The loan program is financed through the Commodity Credit Corporation and is not part of FSA's farmer loan programs. Farmers can receive 7-year fixed interest rate loans to help them build or upgrade commodity storage and handling facilities for certain grains and oilseeds. Loans can not exceed \$100,000 and are charged an interest rate equivalent to the interest rate on U.S. securities of comparable maturity. Lending authority of \$350 million was budgeted for the program in fiscal 2000, with actual loan volume totaling \$80 million. For fiscal 2001, \$150 million in lending has been budgeted. In October, the down payment requirement for the program was reduced from 25 percent to 15 percent.

The Agricultural Risk Protection Act of 2000 (P.L. 106-224) provided for two special loan programs to assist apple producers experiencing low prices and to assist seed producers who did not receive payments from a bankrupt seed company. The special apple loan program provides \$99 million in lending authority until used, and the emergency loan program for seed producers provides up to \$35 million in lending authority until used. Special apple loans are for a maximum of 3 years and borrowers are charged an interest rate equal to that of U.S. securities of comparable maturity. The emergency loans for seed producers are interest-free for up to 18 months, under certain circumstances, and may be converted to regular interest rate USDA farm operating loans with a 7-year repayment period, under certain circumstances. Both programs become operational in fiscal 2001.

The 2000 Act also contained a provision that suspended eligibility restrictions on FSA farm operating loans through the end of 2002. Under existing law direct loan borrowers are limited to 7 years of borrowing eligibility and guaranteed borrowers to 15 years of direct and guaranteed program usage. Beginning farmers, with 5 or less years owning or operating a farm, are still to be given preference to direct OL lending.

Program Changes Underway

On September 12, 2000, FSA published proposed rule changes to its emergency disaster (EM) loan program in an attempt to simplify and streamline the delivery of loan funds. Final rule changes are expected in the spring of 2001. Emergency loans help producers cover production and physical losses in counties declared as disaster areas. The producer must be an established farmer who suffered a qualifying loss or a production loss of at least 30 percent in any single farm or ranch enterprise.

The proposed regulations would make a number of changes to reduce burdens on applicants and agency staff. Determining losses on crops would be simplified by adopting crop insurance methodology and simplifying credit elsewhere tests. Losses on livestock would be considered a physical loss instead of a production loss and loans could be obtained for up to 100 percent of production loss instead of 80 percent. The proposed rules would require crop insurance on all crops used as security for an EM loan. The proposed rule also addresses statutory changes made in 1998 that require FSA not reject an EM loan if security is inadequate, provided the borrower can show repayment ability.

FSA is also in the process of making regulatory changes that would attempt to streamline and simplify its direct farm loan programs. One such initiative was implemented in January 2001. This change was a low documentation option for the direct operating loan program that reduces paperwork and hastens approval times for small loans and borrowers with demonstrated repayment histories.

Options Made for Shared Appreciation Agreements

Beginning in fiscal 1989, FSA began discharging indebtedness of borrowers under loan restructuring rules established by the Agricultural Credit Act of 1987. Some of these debt write-downs were made with shared appreciation agreements (SAA) that required the borrower to repay all or a portion of the write-down at the end of a 10-year period if the real estate security appreciated. The number of FSA borrowers with these contracts totaled 10,600 and the average write-down per borrower totals nearly \$145,000.

Most of the shared appreciation contracts have or are coming due in the next year or two. Because many of the contracts were made in the late-1980's and early-1990's when farm real estate values were depressed, many borrowers with shared appreciation agreements have seen the value of their farmland appreciate sharply during the 1990's and now owe a substantial payment to FSA.

To assist borrowers in repaying any appreciation owed, borrowers with SAA that had not matured before August 18, 2000, can deduct certain capital improvements made to property under the agreement period. All new SAA's executed after that date would have a 5-year term. FSA has been offering financing for those unable to make their SAA recapture payments when they come due. The fiscal 2001 agricultural appropriations act allowed FSA to finance recapture repayments for up to 25 years at lower financing rates (5.5 percent as of November 1, 2000).

Table 17—Farm Service Agency major farmer program level and obligations, fiscal 2000, and program level, fiscal 2001

Program	Fiscal 2000 program level 1/	Fiscal 2000 obligations 2/	Fiscal 2001 program level 1/
<i>Thousand dollars</i>			
Farm ownership (FO)			
Direct	253,251	233,024	130,800
Guaranteed	1,002,446	873,468	1,011,622
Operating loans (OL)			
Direct	935,291	664,207	701,114
Guaranteed	2,837,471	1,800,595	1,884,564
Subsidized	918,622	802,063	495,795
Unsubsidized	1,918,849	988,533	1,388,819
Emergency disaster (EM)	582,961	150,852	298,569
Total	5,611,420	3,722,147	4,026,669

1/ Budgetary appropriations setting limits on the volume of new loans that can be issued during the fiscal year. Includes supplemental appropriations. Some funding is transferable between programs and some programs have unused funding available from previous years.
2/ Actual amount of lending authority committed to new loans or loan guarantees.

Source: Farm Service Agency, Report 205.

Table 18—Farm Service Agency farmer program obligations, September 30, 1987, to September 30, 2000

Fiscal year	Obligations 1/			Outstanding principal of farmer programs 2/
	Total	Direct (Insured)	Guaranteed	
			Amount	Share of total
	<i>-----Million dollars-----</i>		<i>Percent</i>	<i>Mil. Dol.</i>
1987	3,080.5	1,515.0	1,587.4	51.5
1988	2,320.7	1,065.8	1,271.4	54.8
1989	2,229.6	1,030.1	1,199.5	53.8
1990	2,193.2	921.3	1,271.9	58.0
1991	2,124.1	633.7	1,490.4	69.2
1992	2,306.4	714.5	1,591.9	69.0
1993	2,135.2	672.7	1,432.5	67.1
1994	2,725.6	881.9	1,843.7	67.6
1995	2,501.9	563.6	1,938.3	77.5
1996	2,683.2	832.3	1,850.9	69.0
1997	2,319.3	744.8	1,574.5	67.9
1998	2,174.1	738.7	1,435.4	66.0
1999	3,839.3	1,288.9	2,550.4	66.4
2000	3,722.1	1,048.1	2,674.1	71.8

1/ Obligations are the dollar amounts of funds loaned or guaranteed, including the dollar amount of interest rate assistance provided on guaranteed loans for years prior to 1993. Excludes obligations for credit sales of acquired property, Indian land acquisition loans, and agricultural resource conservation demo loans. 2/ Total outstanding principal balance of direct or insured and guaranteed program loans at yearend.

Sources: Farm Service Agency, 616 Report, 4067C Report, and 205 Report, various issues.

Table 19—Farm Service Agency direct farmer loan program delinquencies, September 30, 1987, to September 30, 2000

Year 1/	Number of active cases 2/			Principal outstanding		
	Total	Delinquent 3/		Total	Delinquent 4/	
		Total	Proportion		Amount	Share of total
	-----Number-----		Percent	-----Million dollars-----		Percent
1987	388,833	127,577	32.8	25,763.7	6,592.0	25.6
1988	376,388	137,958	36.7	25,065.0	8,321.7	33.2
1989	346,442	114,737	33.1	23,281.9	8,005.6	34.4
1990	299,069	80,341	26.9	19,544.2	6,138.8	31.4
1991	280,528	79,204	28.2	17,465.5	5,507.5	31.5
1992	251,892	73,657	29.2	15,536.7	4,804.8	30.9
1993	224,739	56,099	25.0	13,775.5	4,116.2	29.9
1994	208,130	47,723	22.9	12,622.6	3,569.9	28.3
1995	194,034	52,635	27.1	11,522.3	3,199.4	27.8
1996	182,305	42,111	23.1	10,584.2	2,420.3	22.9
1997	170,488	32,051	18.8	9,841.2	2,036.5	20.7
1998	158,920	28,013	17.6	9,152.6	1,692.0	18.5
1999	148,879	24,830	16.7	8,937.9	1,398.7	15.6
2000	142,294	22,118	15.5	8,657.9	1,178.6	13.6

2000 by major programs

Farm ownership 5/	52,254	5,019	9.6	3,505.0	156.3	4.5
Operating loans 6/	46,167	9,732	21.1	2,693.0	387.9	14.4
Emergency-disaster	28,932	5,165	17.9	1,875.2	490.7	26.2

1/ September 30 of year shown. 2/ May include duplications because some borrowers have loans under several different programs. Prior to 1988 active cases excluded those borrowers who are in foreclosure, bankruptcy, or liquidation status. Active cases do not include loans made to associations. Excludes nonprogram loans. 3/ Prior to 1988 a case was considered delinquent when a payment was more than \$10 and 15 days past due. Beginning in 1988, a case is delinquent if a payment is more than 30 days past due. 4/ Past due principal and interest payments. 5/ Excludes loans for nonfarm enterprise purposes. 6/ Excludes loans to youths.

Source: Farm Service Agency, 616 Report, various issues.

Table 20—Farm Service Agency guaranteed farmer loan program delinquencies, September 30, 1987, to September 30, 2000

Year 1/	Number of active cases			Principal outstanding		
	Total 3/	Delinquent		Total	Delinquent 2/	
		Total	Proportion		Amount	Share of total
	-----Number-----		Percent	-----Million dollars-----		Percent
1987	18,887	1,052	5.6	2,384.0	42.6	1.8
1988	27,519	1,298	4.4	3,177.6	54.1	1.7
1989	30,016	1,580	5.3	3,243.7	60.6	1.9
1990	36,955	1,681	4.6	4,139.8	58.5	1.4
1991	40,169	1,904	4.7	4,526.6	59.3	1.3
1992	42,189	2,376	5.6	4,923.9	102.8	2.1
1993	42,475	2,077	4.9	5,044.8	98.5	2.0
1994	44,129	1,659	3.8	5,417.5	82.3	1.5
1995	46,838	1,821	3.9	5,933.1	91.3	1.5
1996	48,468	2,311	4.8	6,360.3	112.5	1.8
1997	49,512	2,540	5.1	6,505.2	124.5	1.9
1998	48,795	2,759	5.7	6,537.7	135.4	2.1
1999	49,279	2,925	5.9	7,326.9	172.2	2.4
2000	50,069	2,235	4.5	7,967.1	145.9	1.8

2000 by major program area

Farm ownership	21,588	771	3.6	3,581.9	42.7	1.2
Operating loans	28,419	1,453	5.1	4,380.7	103.1	2.4

1/ September 30 of year shown. 2/ Amount delinquent includes past payments of principal and accrued interest. 3/ May include duplications because some borrowers have loans under several different programs.

Source: Farm Service Agency, 4067 Report, various issues.

Growth in Farmer Mac I Volume Slows

Delinquencies and loan loss reserves inch up as lending volume sags.

Farmer Mac I delinquent loan volume rose to 1.44 percent of total volume at yearend. The delinquency rate on loans guaranteed since 1996 rose from 1.05 percent to 1.25 percent. As a result of weaker credits, the Federal Agricultural Mortgage Corporation (Farmer Mac) added \$4.7 million to its provision for principal and interest losses in 2000, up from \$3.7 million in 1999.

Farmer Mac's total loan loss reserves rose from 0.35 percent of guaranteed loan volume at the end of 1999 to 0.45 percent at the end of 2000. Weakness in the farm economy and a greater number of its loans at an age where default is more common might explain some of the rise in non-performing assets. Generally, the probability of default follows a distribution, where recent loans and older loans are less likely to default.

The average loan-to-collateral value ratio on non-performing loans made since 1996 was 57 percent and so barring an unforeseen decline in farm property values, the majority of delinquent loans appear to be sufficiently secured. The weighted average loan-to-value ratio for all loans is a low 51 percent. Delinquencies mostly come from Western States and farms that grow crops or have permanent plantings.

At the end of 2000 there was a total of \$2.6 billion in outstanding Farmer Mac I loans and guaranteed loans, up from \$2.0 billion in 1999. The 2000 total includes \$863 million in long-term standby purchase commitments (LTSPC) volume. Under an LTSPC, the seller passes the credit risk of qualified loans or groups of loans on to Farmer Mac in exchange for the payment of an annual guarantee fee. An LTSPC provides the seller with an unconditional commitment by Farmer Mac to purchase identified agricultural mortgages under specified circumstances over the life of the loan. Essentially, Farmer Mac is guaranteeing the identified loans against default, while the participating lender retains interest rate risk. This eliminates credit risk for the lender and therefore reduces the capital it is required to hold for the loans.

Volume Slows

Farmer Mac purchased or guaranteed \$815 million in loans during 2000, down from the \$1.2 billion recorded in 1999. The volume decline resulted from a decrease in the issuance of LTSPCs from \$635 million to \$373 million. No swaps were completed during the year. Under a swap, the seller exchanges loans for a Farmer Mac guaranteed security as an alternative to selling them outright or pledging them as collateral. Loans purchased through its open window program rose modestly from \$392 million in 1999 to \$442 million in 2000.

Another important component of Farmer Mac's total business is the USDA guaranteed loans it purchases under the Farmer Mac II program. Because Farmer Mac purchases only the USDA guaranteed portion of these loans, the purchases essentially carry no credit risk. With greater

guaranteed lending volume in 2000, sales under Farmer Mac II rose sharply. Farmer Mac purchased \$194 million in USDA guaranteed loans in 2000, up from the \$116 million purchased in 1999. Outstanding Farmer Mac II volume stood at \$518 million at the end of 2000, up from \$388 million at the end of 1999. Much of the increase in Farmer Mac II volume is coming from the purchase of Business and Industry Loan (B&I) guaranteed loans as opposed to FSA guaranteed farm loans. In April, Farmer Mac sold a pool of \$70 million in Farmer Mac II loans to the public, most of which were B&I guaranteed loans.

Net Income Rises

Farmer Mac had nearly \$1.4 billion in cash and investments at yearend, up from \$1.2 billion reported at the end of 1999. Farmer Mac's large investment portfolio contributes significantly to net interest income and the profits generated by the government-sponsored enterprise. Net interest income for Farmer Mac rose \$17.7 million in 2000 from \$15 million in 1999. However, through the first 9 months of the year net interest margins fell from 67 basis points to 62 basis points. Net income rose to \$10.4 million during 2000.

Farmer Mac regulatory core capital stood at \$101 million at year-end, exceeding minimum capital by only \$4 million. Because Farmer Mac is close to its minimum capital requirement it may have to trim the growth of on-balance sheet assets in 2001. However, Farmer Mac can readily accomplish this by reducing its large holdings of cash and cash equivalent assets or by selling more agricultural mortgage-backed securities (AMBS) to the public.

Farmer Mac had ceased its sales of Farmer Mac I AMBS in 1998 and had been retaining purchased loans on its balance sheet until early 2000 when it commenced sales again. Farmer Mac issued \$205 million in Farmer Mac I agricultural mortgage backed securities in 2000, of which \$91 million were sold to the public. Because retaining AMBS on its balance sheet requires 2.75 percent capital as opposed to 0.75 percent for AMBS sold to investors, Farmer Mac could boost its capital ratios quickly by selling off its large AMBS portfolio. However, altering the composition of its balance sheet assets would have a material impact on future income growth.

Farmer Mac volume for 2000 will be affected by the overall demand for farm mortgages for purchases and for refinancing purposes and need of lenders to mitigate credit and interest risk or improve their liquidity. Mortgage volume for purchases was relatively weak in 2000 and may stay so in 2001. Lower interest rates in 2001 could raise demand for fixed-rate loan products offered by Farmer Mac. As rates fall, more farmers will be interested in refinancing higher priced fixed-rate debt or in locking in lower interest rates for longer periods. Of course any deterioration in the financial strength of the farm sector would also affect demand for Farmer Mac products and the quality of its portfolio.

Moderate Increases in Farmland Values Help Farm Lenders and Farmers Holding Real Estate-Backed Farm Loans

Significant direct government payments help support farmland values. Farmland values increased during 1999, continuing a decade-plus trend that helped strengthen the farm sector's balance sheet. Further small gains are expected when 2000 results are tallied.

Farmland currently accounts for roughly 73 percent of farm sector business assets. Some 53.9 percent of total farm sector debt at the end of 2000 was real estate debt, composed of either mortgages for purchase of farmland or short- or intermediate-term debt secured by farmland. Consequently, the financial security of farm sector borrowers and their lenders is affected by changes in farm real estate values. In each of the last 3 years, low commodity prices and potential economic adversity have prompted legislation that increased monetary assistance to farmers. These payments have helped to maintain farm income, support farmland values, and, as a result, provide a measure of security for the loans provided by lenders.

Current information on farmland values is available only from a few regional surveys conducted by Federal Reserve Banks (FRB) and universities. Information from the Seventh, Ninth, and Tenth Federal Reserve Districts (FRD) indicates that farmland values increased throughout 2000, but that the rate of increase slowed during the last two quarters. The FRB of Kansas City monitors the value of cropland and ranchland in parts of Kansas, Missouri, Nebraska, Oklahoma, Colorado, New Mexico, and Wyoming. All types of land increased in value during the first two quarters of 2000. Cropland and pasture land prices increased throughout 2000 in the Minneapolis FRD (Montana, North Dakota, South Dakota, Minnesota, northwestern Wisconsin and the Upper Peninsula of Michigan). The value of farmland increased throughout the first 3 quarters of 2000 in the Chicago FRD (Illinois, Indiana, Iowa, Michigan, and Wisconsin). A general consensus is that farmland values were weakened by low crop prices, but underpinned by government payments. In the Dallas FRD, however, farmland values generally moved lower after increasing during the first quarter.

A November survey by Iowa State University found that Iowa had experienced widespread farmland value increases during 2000, with all 99 counties showing increases. The statewide average increase of 4.3 percent reversed a downward trend of 1.1 percent in 1999 and 1.9 percent in 1998.

The most recent national data on farmland values are those released by the National Agricultural Statistics Service on March 23, 2000, covering the change in value for calendar year 1999 (see table 21 and fig. 15). At that time, the value of agricultural real estate reached an all-time high of \$1,050 per acre as of January 1, 2000, up 2.9 percent from a year earlier. The largest increases occurred in the Lake States (including 13.5 percent in Michigan and 9.5 percent in Wisconsin) and the Southeast (including 10.5 percent in Alabama and 10.4 percent in Georgia). Washington State

showed the largest decrease—3.4 percent. Small decreases of less than 2 percent were reported for 5 other States: Illinois, Indiana, Iowa, West Virginia, and New Mexico.

The value for January 1, 2000, is 75.3 percent above the trough of \$599 reached in early 1987 following the 1980's "farm crisis." Since 1987, every region except the Southern Plains has exhibited gains of more than 50 percent in farmland values (fig. 15). Most regions have regained all that they lost during the 1980's. The Northern and Southern Plains are the exceptions. Farmland values in the heavily populated Northeast declined very little in the 1980's, amounting to only a slight deviation from steady growth since 1970.

In inflation-adjusted terms, the U.S. average farmland value for 2000 is 22.8 percent above its 1987 level. On a regional basis, the increases in real values range from 47.5 and 43.1 percent in the Lake and Corn Belt States, respectively, to as little as 11.5 percent in the Northern Plains. The Southern Plains did not reach a low point in real values until 1993 and though real value has subsequently increased 10.4 percent, it is still below its 1987 level.

Agricultural land values are primarily determined by the income earning potential of the land, as measured by expected returns from crops and livestock. Federal farm programs also contribute to farmland values by increasing the expected returns from land and reducing the income variability of farm operations. During 1999 and 2000, government payments assumed a much larger proportion of returns. In 2000, government payments reached a record high of \$22.1 billion, including \$8.9 billion in emergency assistance and \$6.4 billion in loan deficiency payments. Total direct government payments are expected to account for almost half of reported net farm income and about 39 percent of net cash income. Research has shown that increased net returns provided by government payments are partially "capitalized" into per-acre values. The degree to which payments are capitalized has been found to be largest in the grain-growing regions of the Northern Plains and the Corn Belt, as well as scattered areas of the Southern Plains, Northeast, and Mountain regions.

In addition, nonagricultural factors are playing a greater role, since in many areas the discounted present value of the land's potential use for nonagricultural development is also "capitalized" into per-acre values. Research indicates that 10 to 20 percent of the farmland in the United States may be subject to urban influences, with the degree of influence varying directly with its proximity to metropolitan areas.

The increase in farm real estate values projected to have occurred in 2000 improves the financial position of many farm businesses, just as value increases have done continuously since 1987. The exact size and extent of value changes across the country will not be known until the National Agricultural Statistics Service's April release of State estimates. How long the unfavorable outlook for some

key crop and livestock prices continues will have an important impact on the direction of farmland value changes in 2001 and beyond. The outlook will also be influenced by expected government commodity policy and especially by the provisions of the next farm bill, scheduled to be written in 2002. Nationwide, average farmland values are forecast to increase 1 percent during 2001.

Table 21— Average per-acre value of farm real estate, by farm production region, 1987, 1999, and 2000

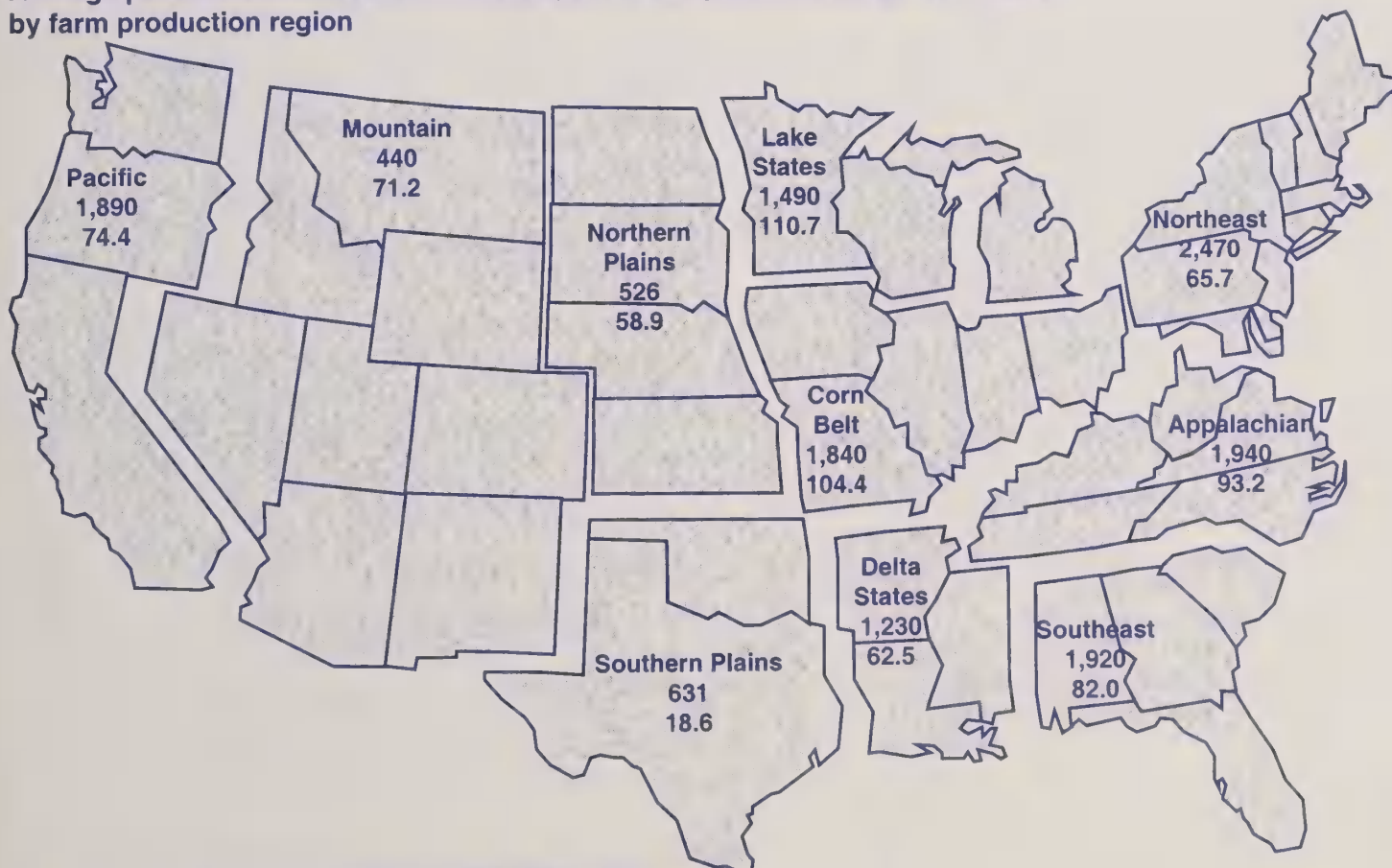
Region	1987	1999	2000	Change 1999-2000	Change 1987-2000
	-----Dollars-----			-----Percent-----	
Northeast	1,491	2,370	2,470	4.2	65.7
Lake	707	1,390	1,490	7.2	110.7
Corn Belt	900	1,830	1,840	0.5	104.4
Northern Plains	331	510	526	3.1	58.9
Appalachian	1,004	1,840	1,940	5.4	93.2
Southeast	1,055	1,770	1,920	8.5	82.0
Delta	757	1,180	1,230	4.2	62.5
Southern Plains	532	613	631	2.9	18.6
Mountain	257	426	440	3.3	71.2
Pacific	1,084	1,870	1,890	1.1	74.4
U.S.	599	1,020	1,050	2.9	75.3

1/ Value data are as of February 1 for 1987 and January 1 for 1999-2000.

Source: National Agricultural Statistics Service.

Figure 15

Average per-acre value of farm real estate, 2000, and percent change, 1987-2000, by farm production region



Top number: Value of farm real estate per acre, January 2000

Bottom number: Percent change, February 1, 1987 - January 1, 2000

Source: National Agricultural Statistics Service.

Off-Farm Income Supports Many Farm Households

Many farmers have substantial off-farm income that can cover living expenses and be used to pay loans, but off-farm income varies substantially by type of farm.

By combining income from farm and off-farm sources, operators averaged \$64,300 in total household income in 1999, about 17 percent higher than the \$54,800 average for all U.S. households. On average, 90 percent of farm operators' household income came from off-farm sources in 1999. Reliance on off-farm income, however, varied widely among different types of farm households. Due to off-farm income, average farm household income was particularly high in metro areas.

Receipt of off-farm income also varied by farm and operator characteristics. The Economic Research Service (ERS) has developed a typology, or classification system, to divide farms into mutually exclusive, more homogeneous groups (box). For most small farm groups, virtually all income came from off-farm sources. On average, farming made the largest contribution to household income for groups with sales of \$100,000 or more (high-sales, large, and very large farms), and farming's contribution increased with sales.

Farmers' wealth consists largely of their farms, regardless of typology group. Thus, lenders can assume that most small farms will pay off their loans with off-farm income. But, collateral used to back loans will often be farm assets—largely real estate.

Sources and Level of Income

Households operating very large farms received only 18 percent of their income from off-farm sources, much less than the other groups. In addition, 70 percent of these households relied on farming for at least half of their income. Nevertheless, households in this group received an average of \$35,600 in off-farm income, mostly from earned sources (self-employment or wage or salary jobs). Households operating very large farms had the highest average household income, \$201,200, more than three times the average for all U.S. households.

Households operating residential/lifestyle farms or large farms also had average income above the average for all U.S. households, but the sources of income differed between the two groups. Households with residential/lifestyle farms received practically all of their income off-farm, largely from earned sources. About 63 percent actually lost money farming. Forty-two percent of the residential/lifestyle farms specialized in beef, which—in the case of cow-calf enterprises—can have relatively low labor requirements that mesh well with off-farm work. This group also had the lowest share of operators at least 65 years old (5 percent).

In contrast, households with large farms received only 40 percent of their income from off-farm sources, and most (63 percent) of these households received at least half of their income from farming. The most common specialization for large family farms was cash grain (37 percent of farms in the group).

Households operating high-sales small farms had an average income that did not differ significantly from the average for all U.S. households. Fifty-eight percent of the households with high-sales farms received at least half their income from farming, and farming accounted for 50 percent of the group's total household income, on average. About 60 percent of the farms in this group specialized in either cash grains or dairy.

The three remaining groups of operator households—those with retirement, low-sales, or limited-resource farms—received income below the average for all U.S. households. Most of the income in these groups came from off-farm, and all three groups received a relatively small share of off-farm income from earned sources. One would expect households with retirement farms to rely heavily on unearned income (including income from Social Security, other retirement programs, and investments) rather than earned income, because retired operators have largely left the labor force. Approximately 41 percent of limited-resource farmers also reported they were retired and thus would rely on unearned income.

Thirty-nine percent of low-sales farmers were age 65 or more, compared with 9 to 13 percent of households in the groups with farm sales of at least \$100,000. Many of these older low-sales farmers received Social Security because they scaled back their farming activities and restricted their off-farm work. Nevertheless, they still farmed enough to consider farming as their major occupation.

Although many farm households relied heavily on off-farm sources for income, most operator household wealth came from the farm, regardless of typology group. The share of household net worth from the farm ranged from about three-fifths of net worth for limited-resource, retirement, and residential/lifestyle farms to about four-fifths for the remaining groups. Overall, real estate accounted for most (75 percent) of the assets of the farms held by operator households. Real estate made up a smaller share of the farm assets for groups with sales of \$100,000 or more, reflecting these larger farms' greater propensity to rent land and hold other assets such as equipment, machinery, and inventories.

Geographic Variations

Farm households located in metro counties relied the most on off-farm income, receiving 95 percent of their income from off-farm sources. At the other extreme, only 71 percent of operator household income came from off-farm in farming-dependent counties, largely rural counties concentrated in the Northern and Southern Plains.

Average household income was greater in metro counties (\$77,000) than either farming-dependent counties (\$59,700) or other nonmetro counties (\$57,100), largely because of substantially higher off-farm income in metro counties. The

higher off-farm income in metro areas probably reflects better employment opportunities.

Urban competition for land also helps explain why average household net worth was higher in metro areas than in other nonmetro counties. The difference in average farm net worth between metro and farming-dependent counties was not statistically significant, however. Although urban

pressures may help raise wealth in metro areas, farms in farming-dependent counties are larger, which would raise their value despite less urban demand for land. About one-quarter of farm households in farming-dependent counties operated farms with sales of at least \$100,000, compared with just over one-tenth of households in other nonmetro or metro counties.

Farm Typology Group Definitions

Small Family Farms (sales less than \$250,000)

- **Limited-resource farms.** Small farms with: sales less than \$100,000, farm assets less than \$150,000, and total operator household income less than \$20,000. Operators may report any major occupation, except hired manager.
- **Retirement farms.** Small farms whose operators report they are retired.*
- **Residential/lifestyle farms.** Small farms whose operators report a major occupation other than farming.*
- **Farming-occupation farms.** Small farms whose operators report farming as their major occupation.*
 - **Low-sales farms.** Sales less than \$100,000.
 - **High-sales farms.** Sales between \$100,000 and \$249,999.

Other Farms

- **Large family farms.** Sales between \$250,000 and \$499,999.
- **Very large family farms.** Sales of \$500,000 or more.
- **Nonfamily farms.** Farms organized as nonfamily corporations or cooperatives, as well as farms operated by hired managers.

* Excludes limited-resource farms whose operators report this occupation.

Defining Operator Household Income

Operator household income is measured according to the definition of income used in the Current Population Survey (CPS), conducted by the Bureau of the Census. The CPS is the source of official U.S. household income statistics. Calculating an estimate of farm household income that is consistent with CPS methodology allows comparisons between the income of farm households and all U.S. households.

The CPS defines income to include any receipts of cash. The CPS definition departs from a strictly cash concept by deducting depreciation, a noncash business expense, from the income of self-employed people. The derivation of operator household income from the 1999 Agricultural Resource Management Study is outlined below.

	<i>Dollars per farm</i>
Net cash farm business income	13,194
Less depreciation	7,027
Less wages paid to operator and gross farmland rental income	1,301
Less adjusted farm business income due to other households	1,262
	<i>Dollars per household</i>
Equals adjusted farm business income	3,603
Plus wages paid to operator, net farmland rental income, and other farm-related earnings	2,755
Equals earnings of the operator household from farming activities	6,359
Plus earnings of the operator household from off-farm sources	57,998
Equals average farm operator household income	64,347

Net cash farm business income presented above differs from sector net cash income. Net cash farm business income is a component of farm sector income. It excludes the income of contractors, landlords, farms organized as nonfamily corporations or cooperatives, and farms run by a hired manager.

Table 22—Income and net worth of farm operator households, by farm typology group and county type, 1999

Item	Operator households	Total household income			Off-farm income		Total net worth		Share of farm assets in real estate
		Average amount	From off-farm sources 1/	Percent U.S. average household income 2/	Average amount	From earned sources	Average amount	From off-farm sources	
	Number	Dollars per household	Percent	Percent	Dollars per household	Percent	Dollars per household	Percent	Percent
All operator households	2,147,576	64,347	90.1	117.3	57,988	77.0	563,563	30.9	75.1
Farm typology:									
Small family farms: 3/	126,920	9,534	137.5	17.4	13,114	44.7	132,618	41.9	72.7
Limited-resource 4/	297,566	40,643	103.3	74.1	41,991	26.8	527,877	37.5	85.4
Retirement 5/	931,561	83,788	104.5	152.8	87,796	91.1	470,844	44.4	83.1
Residential/lifestyle 5/									
Farming-occupation: 5/									
Low-sales	480,441	39,764	100.3	72.5	39,892	56.1	594,270	23.8	78.8
High-sales	175,370	53,322	49.9	97.2	26,621	72.1	750,873	14.4	66.1
Large family farms 3/	77,314	85,685	40.4	156.2	34,598	69.4	1,083,108	15.7	63.4
Very large family farms 3/	58,403	201,206	17.7	366.9	35,572	65.7	1,657,993	13.7	61.0
County type: 6/									
Metro	745,639	76,982	95.2	140.4	73,307	78.4	650,120	33.8	79.8
Nonmetro	1,401,936	57,626	86.5	105.1	49,840	75.9	517,526	28.9	72.2
Farming-dependent	277,103	59,711	70.8	108.9	42,282	75.3	531,422	24.2	64.4
Other nonmetro	1,124,833	57,113	90.5	104.1	51,702	76.0	514,103	30.2	74.6

Note: Household data are not collected for nonfamily farms. 1/ Income from off-farm sources can be more than 100 percent of total household income if earnings of the operator household from farming activities are negative. 2/ Average farm household income divided by U.S. average household income (\$54,842) from the Current Population Survey (CPS). 3/ Family farms include farms organized as sole proprietorships, partnerships, or family corporations. Farms operated by hired managers are excluded. As defined here, small farms have gross sales of less than \$250,000. Large family farms have sales between \$250,000 and \$499,999. Very large farms have sales of \$500,000 or more. 4/ Limited-resource farms meet three conditions: household income less than \$20,000, farm assets less than \$150,000, and gross sales less than \$100,000. 5/ Small farms other than limited-resource farms are classified according to the major occupation of their operators. Operators of retirement farms are retired. Operators of residential/lifestyle farms report a nonfarm occupation. Operators of farming-occupation farms report farming as their major occupation. Farming-occupation farms are further divided into two groups: low sales (sales less than \$100,000) and high sales (sales between \$100,000 and \$249,999). 6/ Metro areas are defined by the U.S. Office of Management and Budget (OMB) as geographic areas with a large population nucleus (generally at least 50,000 inhabitants), plus adjacent communities that are socially and economically integrated with that nucleus. Metro designations as of 1993, which identified 813 metro counties, are used here. The 2,276 nonmetro counties are a residual, the part of the Nation lying outside metro areas. There are 556 farming-dependent nonmetro counties where farming accounted for at least 20 percent of earned income over the 3 years from 1987 to 1989.

Source: 1999 Agricultural Resource Management Study (ARMS) for farm operator and farm household data. Current Population Survey (CPS) for U.S. average household income.

Farm Debt Growth To Slow in 2001

Farm debt is anticipated to rise 1.2 percent in 2001, following an increase of 2.4 percent in 2000. Loan balances are expected to rise for most lenders. Only Farm Service Agency direct loans are expected to decline.

Farm business debt is anticipated to stand at about \$182.8 billion by the end of 2001, up from \$180.6 billion in 2000 (app. table 1). Total farm business debt will have increased almost \$41 billion from the beginning of 1994 through yearend 2001, growing at an average annualized rate of 3.2 percent. Total debt is projected in 2001 to reach within 6 percent of its record-high level of \$193.8 billion set in 1984.

In an improving 2001 price environment in cash markets for many agricultural commodities, lenders are expected to encourage their farmer clients to improve their balance sheets by applying a portion of currently substantial government payments to reduce existing debt. Farmers and lenders should be motivated to reduce financial risk exposure, given the uncertainty concerning future continuation of current high levels of government financial assistance. Actual changes in farm business debt levels in both 2000 and 2001 will depend heavily on the extent to which farmers use these payments to improve future financial positions by reducing outstanding loan balances.

Some farmers may choose to retain a substantial portion of the emergency assistance payments they receive in 2000 and early 2001, anticipating more limited credit availability in the spring. While institutional lenders report ample funds available for lending to creditworthy borrowers, some current borrowers may have difficulty showing that they can cash flow their production loans. Rising input costs, especially for fertilizer and energy, will likely offset improving commodity prices that are used in projecting 2001 cash receipts. Farmers may view keeping their payments as a means to protect against potential difficulty in obtaining adequate production financing in 2001. Any funding gaps may be filled by an increasing number of suppliers of machinery, seed, and chemicals. These input suppliers are expanding their traditional use of financing as a means to boost product sales, and are offering financing to meet the farmer's full production credit needs.

Farm Debt Expected To Rise Slightly

The expected rise in farm business debt in 2001 will mark 9 consecutive years of increasing farm debt. From the beginning of 1993 through the end of 2000, farm debt rose almost \$42 billion, an increase of 30 percent. Over half of this gain, about \$22 billion, occurred during 1996-1998, when debt grew at an annualized rate of 4.7 percent. From the end of 1998 through 2000, outstanding debt increased \$7.7 billion as the annualized growth rate slowed to 2.2 percent.

Farmers use credit as a source of capital to purchase land, technology, and equipment, which, when appropriately combined, can lead to improved productivity and higher profits. Under the current Farm Bill, farmers have greater

flexibility in determining that combination of commodities to produce to maximize profit on their individual operations. The rise in loan balances in 1997 and 1998 can be at least partially attributed to farmers' view, at that time, of a positive future for U.S. agriculture production, given its assumed comparative advantage in liberalized global markets. The continuing relative strength in farmland markets and rental rates provide evidence that, to an extent, this optimism still prevails.

Debt Growth Facilitated by Balance Sheet Improvement

The increase in debt in recent years has occurred while farm business balance sheets have shown steady improvement. Throughout the 1990's, and especially since 1992, asset value growth has been strong and equity positions have generally improved. Farm sector debt-to-asset ratios have stabilized at about 16 percent, as the increase in farm business debt has been offset by the rise in the value of farm business assets.

Balance sheet improvement can be largely attributed to the strength of farm real estate markets. The value of farm real estate has risen by more than 36 percent from 1992 through the end of 2000, while farm mortgage balances have increased about 29 percent. The resulting decline in U.S. farmland leverage has provided most producers with an added equity cushion to lessen the impact of short-term declines in income.

The value of farm real estate, the largest component of farm assets, is expected to increase about 1 percent nationwide in 2001. While the farm income analysis presented elsewhere in this publication does not assume future legislation, strength in recent farm real estate markets suggests that farmers do not believe that their incomes will decline precipitously in the near future. This apparent confidence is due largely to the emergency government assistance that has been provided to the sector in each of the last 3 years. Bankers in the Chicago Federal Reserve District reported that, despite a slowdown in the rate of increase in the last 2 quarters, land values in the district rose 7 percent in the year ended October 1, 2000. Such gains do not suggest that several years of relatively low commodity prices have made farmers pessimistic about the long-term profitability of farming.

Light Demand for New Machinery, Used Market Picks Up

In the farm sector balance sheet, the value of machinery and motor vehicles is expected to rise modestly in 2000 and 2001, following a 1.3-percent decline in 1999. The Equipment Manufacturers Institute reported unit sales of all

tractors increasing 9.1 percent in 2000, while unit combine sales rose 4.1 percent. This may seem to signify a resurgence of investment in farm machinery, but a closer look indicates that smaller tractors have accounted for the gains in tractor sales.

Unit sales of farm tractors, combines, and other farm machinery developed a demand malaise in late 1998 as the farm sector's economic slowdown took effect. But the slackening in demand came so late that the overall 1998 sales of wheeled farm tractors increased 5.6 percent and combines increased 7.9 percent over 1997. The demand for large 2-wheel drive tractors, 4-wheel drive tractors, and combines has not recovered from this shock. In 2000, sales of large 2-wheel drive tractors (100 HP and over), 4-wheel drive tractors, and combines were down 34.7, 48.5, and 45.4 percent, respectively, from their 1997 (large 2-wheel drive and 4-wheel drive tractors) or 1998 (combines) highs. Overall, farm machinery sales in 2000 compared with 1999 were up moderately, buoyed by sales of smaller 2-wheel drive tractors. Purchases of wheeled farm tractors totaled 149,011 units in 2000, up 9.3 percent from 1999, but this was due to the 12.9 percent jump in sales of small tractors under 40 HP. Sales of these smaller tractors were largely driven by strong off-farm income of residential/lifestyle farms. Combine purchases were up 4.1 percent to 5,663, and sales of 2-wheeled drive tractors 100 HP and over declined 0.1 percent. Sales of 4-wheel drive tractors fell 1.4 percent in 2000, a smaller drop than the 25.9 percent decline in 1999.

While the demand for new machinery is not expanding rapidly, the market for used equipment appears to be strong, especially in the Midwest. Farmers purchasing machinery in early 2001 are reportedly choosing quality used equipment over new, as evidenced by lively auction markets for well maintained, if older, tractors and combines.

Banks and Farm Credit System Predominant Credit Providers

Banks and the Farm Credit System (FCS) provided more than two-thirds of all farm business debt outstanding at the end of 2000. Commercial banks are the leading provider of credit to farmers, accounting for over 41 percent of all farm business debt as of December 31, 2000. Bank debt is expected to rise about 2 percent in 2001, exceeding \$75 billion by yearend.

The FCS is the second largest provider of agricultural credit, supplying about 26 percent. Farm business debt owed to the FCS is forecast to rise slightly in 2001, following increases of 1 percent in 1999 and 3 percent in 2000. This represents a dramatic slowdown in loan growth from 1995-98, when FCS debt grew at an annualized rate of 6.3 percent.

USDA's Farm Service Agency (FSA) guaranteed loan programs continue to gain importance as a credit source for higher risk borrowers. Meanwhile, the agency's direct farm business loan balances are expected to decline in 2000 and 2001, as they have in each of the last 15 years, since reaching \$24.5 billion in 1985. FSA direct loans provided over 16 percent of all farm business debt in 1987. FSA direct farm business loans are projected to total about \$7

billion at yearend 2001, accounting for less than 4 percent of all farm debt.

Farm Mortgage Lending Growing Faster than Nonreal Estate Debt

Farm real estate loan balances are expected to rise slightly faster than nonreal estate debt in 2001, with both growing at less than 1.5 percent. Loans secured by farm real estate are expected to approach \$99 billion by the end of 2001, a level not reached since 1986. Real estate loans are projected to account for 54 percent of total farm business debt of \$182.8 billion. While farm mortgage debt is anticipated to have risen at a 3.2-percent annualized rate from 1998 through the end of 2001, farm business nonreal estate debt is expected to have increased at a rate of 0.4 percent over the same period. Nevertheless, nonreal estate debt is expected to surpass \$84 billion, approaching its 1983 peak historic value of \$87.9 billion.

The recent rapid growth in real estate debt, relative to loans for nonreal estate purposes, is at least partially due to lenders requiring that loans for other purposes be secured by farmland. Loans to purchase machinery and seasonal production loans may be reported as loans secured by farmland, and be counted as farm mortgage loans.

Banks Surpass Farm Credit System as Leading Mortgage Lender

Farm Credit System real estate debt is projected to increase about 1 percent in 2001, after gains of almost 4 percent in 2000 and more than 5 percent annually during 1996-99. Despite these gains, commercial banks passed FCS as the leading supplier of farm mortgage debt during 2000. Each lender ended the year with about \$32 billion in farm business real estate loans, giving each about one-third of the total farm mortgage market.

FCS real estate debt increased from less than \$20 billion at the end of 1977 to more than \$46 billion by yearend 1984. FCS experienced substantial loan losses and borrower flight during the mid-1980's, and farm mortgage debt subsequently fell to \$25 billion by 1992. The FCS' real estate debt rise of 3.5 percent in 1996 was its first significant gain in over a decade. While FCS farm mortgage debt grew from \$25 billion at the beginning of 1993 to more than \$30 billion by the end of 1999, commercial banks' 6.8-percent annualized gain expanded real estate loans from less than \$19 billion to nearly \$30 billion during the same period.

Banks Largest Provider of Nonreal Estate Debt, But Slowly Losing Market Share

Preliminary projections indicate that bank nonreal estate debt will increase less than 1 percent in both 2000 and 2001. Banks currently supply over half of all nonreal estate loans, but have gradually been losing market share since 1994, when bank loans accounted for over 53 percent of all nonreal estate debt. This loss in bank market share has largely been gained by farm machinery manufacturing credit corporations, input suppliers, commodity processors, contractors, and other merchants and dealers, collectively known as "individuals and others" in the farm sector balance

sheet accounts. Since 1994, individuals and others share of farm business nonreal estate debt has risen from 22 percent to more than 25 percent by the end of 2000. Individuals and others nonreal estate debt is projected to rise 5 percent in 2001, and these nontraditional lenders are expected to hold a 26-percent market share by the end of the year.

FCS nonreal estate debt is projected to decrease about 2 percent in 2000, following a gain of less than 1 percent in 2000. FCS nonreal estate loans have generally trended up since 1993, with a loss of 5 percent in 1999 breaking a streak of gains of 10 percent in 1998, 9 percent in 1997, and 12 percent in both 1995 and 1996. FCS nonreal estate debt had previously experienced a surge and decline similar to that of FCS mortgage lending, as it rose from about \$13 billion in 1977 to more than \$21 billion in 1981, when FCS provided 25 percent of nonreal estate debt. Loan balances then fell to less than \$9 billion in 1988, as market share declined to less than 15 percent. FCS nonreal estate debt is projected at about \$16 billion by the end of 2001, accounting for about 19 percent of all nonreal estate farm loans.

Banks' Rising Loan-to-Deposit Ratios Reflect Improved Access to Alternative Funding

The recent growth in farm loan balances experienced by commercial banks is reflected in their loan-to-deposit ratios. Average loan-to-deposit ratios grew to 76.6 percent for

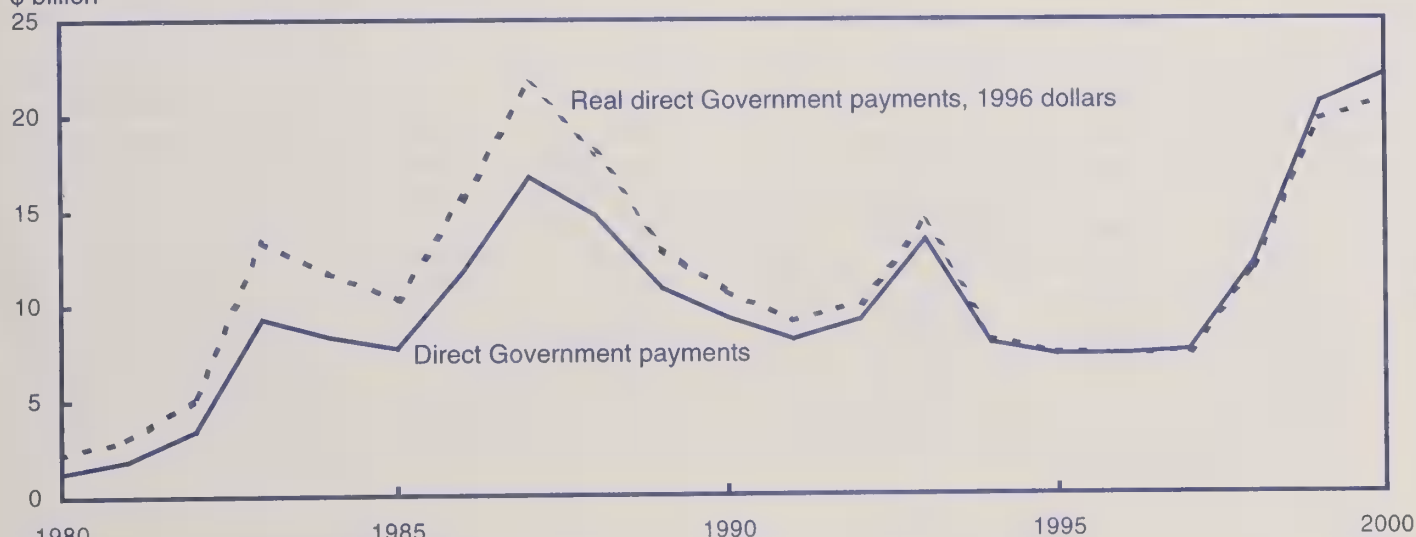
agricultural banks in the year ending September 30, 2000, up from 73.5 percent a year earlier and from 57 percent 8 years earlier. Average loan-to-deposit ratios reported by the Federal Reserve System for agricultural banks increased during the year ending September 30, 2000, for all of the eight reporting Federal Reserve districts. The increases in ratios were significantly larger for 1999-2000 (73.5 to 76.6 percent) than they were for 1998-1999 (72.4 to 73.5 percent). The growing demand for farm loans and increasing farm loan-to-deposit ratios at agricultural banks might be expected to have taken much of the slack out of the lending system's capacity to provide farm loans. But this has not generally been the case. High loan-to-deposit ratios do not necessarily constrain the origination of new loans in today's banking system.

Commercial banks have many nondeposit sources of funds, such as the Federal Home Loan Bank System, and may sell farm mortgage loans to Farmer Mac. The recent jump in loan-to-deposit ratios may indicate a larger reliance on these funding sources plus a sluggish growth in deposits. Thus, profitable, well-managed agricultural banks often have very high loan-to-deposit ratios. Although rural banks make considerably less use of nondeposit funds than banks headquartered in metropolitan areas, most rural banking markets are served by banks that have access to nonlocal sources of funds. Overall, adequate funds are available from banks for agricultural loans, with few banks reporting a shortage of loanable funds.

Figure 16

Direct Federal Government farm program payments to farmers, 1980-2000

\$ billion



Source: Economic Research Service, USDA.

Farm Lender Portfolios and the Financial Condition Of Indebted Farm Operators

by James T. Ryan and Steven R. Koenig¹

Commercial banks and the Farm Credit System provide credit to the broadest segments of agricultural production, but the Farm Service Agency, life insurance companies, and other types of lenders also are important credit sources for certain market niches. This analysis examines the characteristics of borrowers of the major lender types as reported in USDA's 1999 Agricultural Resource Management Study (ARMS). These data indicate that over half of all farm operators do not carry debt from year to year. Within the group of farms that do carry debt, total farm debt is heavily concentrated on large farms and highly leveraged farms. On average, farm operators' financial condition and ability to service debt has improved since 1997.

The U.S. banking system and associations of the Farm Credit System (FCS) are the primary suppliers of credit to U.S. farm operators. Based on data collected in USDA's 1999 Agricultural Resource Management Study (ARMS), commercial banks had a 47-percent market share and the Farm Credit System had a 20-percent market share of total farm operator debt at the end of 1999 (fig. A-1). The share of farm operator debt supplied by these two lenders has been relatively stable over the past few years. The broadly defined individuals and others group, consisting of farmland sellers, merchants, dealers, input suppliers, cooperatives, contractors, and others, provided 27 percent of farm operator debt at the end of 1999. The Farm Service Agency (FSA) through its direct lending programs had a 5-percent share, which has been steadily declining for the last 15 years. FSA direct loan programs have been largely replaced by guaranteed farm loan programs in providing credit for operating expenses and farm ownership. FSA guaranteed about 4 percent of farm operator debt, with most of this volume originated by commercial banks and the FCS.

This analysis explores the distribution of farm debt among different classes of operators and their creditors. Data collected in the 1999 ARMS are used to examine farm operator debt burdens as of December 31, 1999. Since ARMS surveys farm operators, this analysis excludes debt owed by contractors and nonoperator landlords. Farm business debt in the USDA farm sector accounts is based on debt levels reported by lenders, and may include debt owed by nonoperator landlords and contractors. Sector farm business debt stood at \$176.4 billion at the end of 1999, while farm operators reported \$108 billion in the 1999 ARMS. This research applies only to that portion of farm debt that was reported by farm operators in the 1999 ARMS, and expands on a previous analysis of 1997 ARMS data (2). Debt in farm sector accounts rose gradually over the 1997-99 period, but farm operator debt reported in ARMS held roughly constant. Particular attention is focused on the farm loan portfolios of two of the largest groups of farm lenders—commercial banks and the FCS.

Debt is Concentrated in Larger Farms

Not all farm operators report loan balances at the end of the calendar year. Some operators annually obtain and repay loans to finance seasonal production expenses, but many farms, particularly small farms, do not incur debt in their normal operations. ARMS survey results indicate that only 42 percent of U.S. farm operators carried farm business debt from 1999 into 2000 (table A.1). For larger farm operations, borrowing needs are more substantial. About 77 percent of farms with at least \$250,000 in sales reported loan balances on December 31, 1999. Farms reporting no debt balances tend to be smaller in size, with gross cash farm incomes averaging just \$34,200.

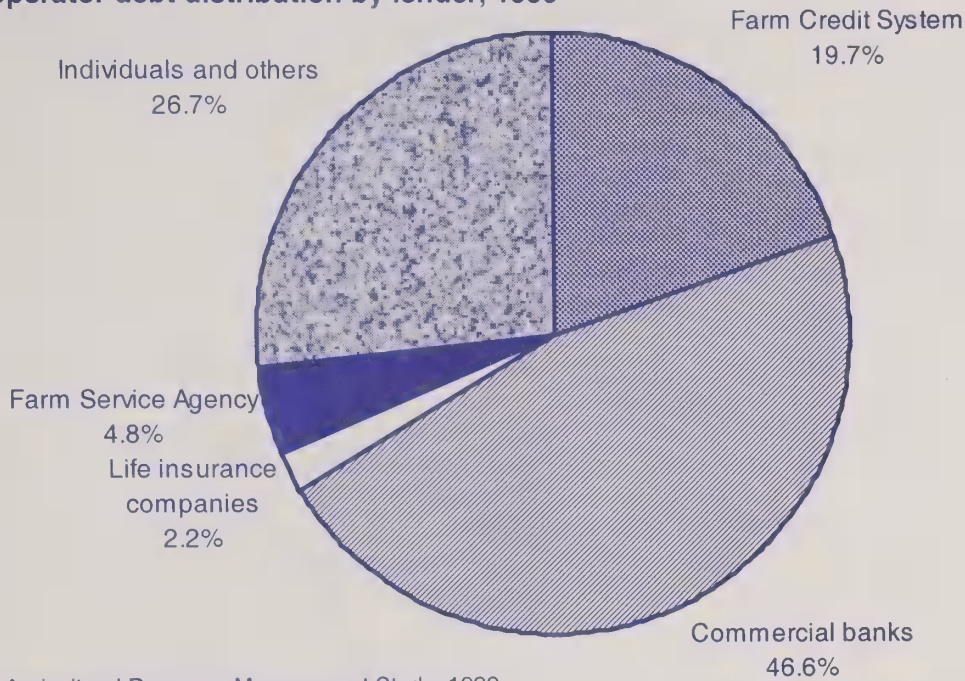
Most operators carry debt levels that appear to be manageable, relative to the value of the assets owned by their farm operations. Indebted farm operators owned assets valued at \$560,000 and reported an average loan balance of \$118,000 at the end of 1999. Balance sheets of indebted operators have improved, on average, since the end of 1997, as the value of assets increased from \$530,000 in 1997, while the average 1999 debt level was similar to that at the end of 1997. As a result of asset growth and stable debt levels, indebted operations reported an average net worth gain of more than \$30,000. Balance sheet gains are also reflected in improved average debt-to-asset ratios, which fell to 20.4 percent in 1999 from 22.4 in 1997.

Larger farms have much greater capital needs and account for a large share of total farm debt. Even so, debt levels do not appear burdensome for larger operations. Farms with over \$250,000 in sales represent 6 percent of all farm operators (11.5 percent of all indebted farm operators) and owed 37 percent of all farm operator debt. In contrast, farms reporting less than \$250,000 in sales and having operators who consider farming to be their primary occupation account for 31 percent of all farms (35 percent of indebted farm operators) and owe 32 percent of all farm operator debt.

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Figure A-1

Farm operator debt distribution by lender, 1999



Source: Agricultural Resource Management Study, 1999.

Table A-1—Selected financial measures for indebted operators, by farm sales volume, 1999

	Value of Sales					
	Primary occupation farming				All others 1/	All indebted
	Under \$100,000	\$100,000- \$250,000	\$250,000- \$500,000	Over \$500,000		
Number reporting debt	194,544	126,287	58,895	45,458	483,722	908,907
	Percent					
Share of all farms reporting debt	40.5	72.0	76.2	77.8	35.7	42.3
Distribution of total:						
Indebted borrowers	21.4	13.9	6.5	5.0	53.2	100.0
Debt	14.3	17.2	14.0	23.2	31.2	100.0
Debt-to-asset ratio (percent)	15.8	19.5	22.0	25.6	19.8	20.4
Term debt coverage ratio 2/	1.4	2.6	2.7	4.0	0.8	2.2
Borrower Financial performance:						
Favorable 3/	53.0	66.0	67.9	54.0	44.8	51.4
Marginal Income 3/	33.4	15.4	12.7	12.9	37.7	30.8
Marginal Solvency 3/	8.3	12.7	11.3	28.3	4.7 *	8.2
Vulnerable 3/	5.4	5.9	8.1	4.8	12.8	9.6
	Dollars					
Total assets	496,249	769,061	1,215,416	2,179,622	301,759	561,440
Total lender debt	79,265	146,922	256,441	549,041	69,351	118,365
Net worth	416,984	622,139	958,972	1,630,581	232,408	443,075
Gross cash farm income	45,805	162,149	324,984	979,685	15,864	110,833
Net farm income	4,596 *	30,735	63,172	212,490	-435.0 c	19,744

1/ Includes nonfamily operations, limited resource, retirement, and residential/lifestyle farms. 2/ Term debt coverage ratio = (Net farm income + nonfarm income + depreciation + interest on term debt + interest on capital leases - total income tax expense - family living expense) / (Scheduled principal and interest payments on term debt + scheduled principal and interest payments on capital leases). 3/ Favorable = net farm income is > 0 and the debt-to-asset ratio is <= to .40; marginal income = net farm income is <= 0 and the debt-to-asset ratio is <= to .40; marginal solvency = net farm income is > 0 and the debt-to-asset ratio is > .40; vulnerable = net farm income is <= 0 and the debt-to-asset ratio is > .40.

CV=(Standard Error/Estimate)*100. *=CV is between 25 and 50. #=CV is between 50 and 75. c=CV is greater than 75. Values with a CV<=25 are unmarked.

Source: 1999 Agricultural Resource Management Study, Economic Research Service, USDA.

As might be expected, average debt levels are much higher for larger farms. Very large family farms (over \$500,000 in sales) reported \$549,000 in debt on \$2.2 million in assets. With a debt-to-asset ratio of 26 percent, these farms are more highly leveraged than other sales classes of indebted farms. These farms appear to have the ability to service the higher debt burdens, as evidenced by their average term debt coverage ratio of 4, the highest for any farm sales class. On average, farms with at least \$100,000 in sales reported adequate ability to make their 1999 debt service payments.

Overall, financial performance can be measured by combining measures of solvency and income for individual farm operators. Farms reporting positive net farm income and debt-to-asset ratios of less than 0.40 are classified as having favorable financial performance, while farms considered vulnerable to failure are those reporting negative net farm incomes and debt-to-asset ratios greater than 0.40. In 1999, about 51 percent of all indebted farms were classified as having favorable financial performance. About two-thirds of farms with sales of \$100,000 to \$500,000 were in the favorable class. About 54 percent of very large family farms were classified as favorable, and fewer than 5 percent of these farms were considered vulnerable to financial stress because of higher debt burdens and negative farm incomes.

FCS More Likely To Lend to Larger Farms

The FCS and banks supplied 66 percent of total farm operator debt at the end of 1999, and, in general, served a broad segment of the farm credit market. The policies of these two lenders toward their farm customers are very important to overall credit delivery. Life insurance companies and FSA focus on lending to more targeted farm operators, and many operations utilize favorable terms provided by merchants, dealers, input suppliers, and land sellers and other individuals for part of their financing needs.

ARMS data have consistently shown that FCS loans are more likely to go to larger farm operations (1). While the Farm Credit System had a 20-percent market share of total farm operator debt at the end of 1999, it had over a 30-percent market share of the debt owed by very large farms (table A-2). Nearly 36 percent of total FCS lending to farm operators went to this largest group of family farms. In contrast, farmers with under \$100,000 in sales that considered farming to be their primary occupation had less than 15 percent of their outstanding debt provided by FCS, and loans to these operations accounted for less than 11 percent of FCS lending volume.

Commercial banks provided 47 percent of all outstanding farm operator debt at the end of 1999, and had the largest market share within each sales class. However, compared with FCS loans, bank lending was spread more evenly among different sales classes. Commercial bank market share of total farm debt ranged from 43 percent for very large family farms to 49 percent for the smallest primary occupation farming group. The share of total bank lending going to these five classes closely matched the share of all

farm lending going to these groups. About 33 percent of bank loan balances were held by residential/life style, retirement, limited resource, and nonfamily farm operations, a group that accounted for 21 percent of FCS debt.

Banks and the FCS together supply nearly 74 percent of the credit to very large family farms, while life insurance companies also lend heavily to this group of farm operations. Nearly half of all 1999 life insurance farm debt was to very large family farms. Since life insurance companies' total farm lending is relatively small, their loans accounted for only 5 percent of debt owed by these farms.

FSA direct lending is primarily to smaller and mid-size farms, with 42 percent of FSA debt owed by primary occupation farming operations with sales less than \$250,000. Despite their importance as a constituency for FSA direct loans, this sales class relies more heavily on other lenders for the bulk of their financing needs. Banks and the FCS supply about 65 percent of credit to this group, and these loans account for 32 percent of bank debt and 28 percent of FCS debt.

Most Indebted Operators Not Highly Leveraged

About 79 percent of all indebted operators reported debt-to-asset ratios below 0.40 at the end of 1999 (table A-3). A ratio above 0.40 is considered to be an indicator of potential financial stress. Only 5 percent of indebted operations had debt-to-asset ratios above 0.70, a level above which operations lacking strong cash flow generation capability may face impending repayment difficulty. About the same proportion of operations reported ratios above 0.40 in 1997, but 6 percent then had ratios exceeding 0.70.

While the distribution of farm operators by debt-to-asset ratio suggests that only a small share of indebted farm operators are overextended, these numbers can be misleading from the lender's viewpoint. Since farms with higher debt-to-asset ratios owe larger amounts of debt, creditors face greater risk exposure than the distribution of borrowers would indicate. However, lenders have also benefited from improving operator balance sheets since 1997. Operations with debt-to-asset ratios over 0.40 owed about 40 percent of total farm operator debt at the end of 1999, down from 43 percent in 1997. Those with 1999 debt-to-asset ratios above .70 owed about 10 percent of debt. This highly leveraged group owed 12 percent of all debt in 1997.

Operators indebted to FCS institutions appear to be the least leveraged, with about two-thirds of FCS debt owed by lower risk borrowers, those reporting debt-to-asset ratios less than 0.40. With 8 percent of debt owed by farms with ratios greater than 0.70, the FCS also had the smallest share of higher risk debt. About 59 percent of bank debt was owed by operations with ratios less than 0.40, while 10 percent was owed by those reporting ratios greater than 0.70. FSA debt faces a less favorable risk profile, on average, with only 40 percent of debt owed by lower risk producers, and 14 percent was owed by those with ratios greater than 0.70.

Table A-2—Distribution of debt by lender, by farm sales volume, 1999

	Value of Sales					
	Primary occupation farming				All others 1/	All indebted
	Under 100,000	\$100,000-250,000	\$250,000-500,000	Over 500,000		
Number reporting debt	194,544	126,287	58,895	45,458	483,722	908,907
	<i>Percent</i>					
Share of all farms reporting debt	40.5	72.0	76.2	77.8	35.7	42.3
Distribution of total:						
Indebted borrowers	21.4	13.9	6.5	5.0	53.2	100.0
Debt	14.3	17.2	14.0	23.2	31.2	100.0
Lender share of debt within sales class:						
Farm Credit System	14.7	19.3	22.1	30.4	13.1	19.7
Commercial banks	49.2	46.1	45.9	43.1	48.7	46.6
Life insurance companies	0.2 #	3.0 *	2.5 *	4.7	0.8 #	2.2
Farm Service Agency	5.6	7.0	5.3	5.5 #	2.5	4.8
Individuals and others	30.3	24.5	24.3	16.4	34.9	26.7
All lenders	100.0	100.0	100.0	100.0	100.0	100.0
Sales class share of total debt owed to:						
Farm Credit System	10.7	16.9	15.7	35.8	20.8	100.0
Commercial banks	15.1	17.1	13.8	21.4	32.6	100.0
Life insurance companies	1.6 *	23.2	15.4	48.8	11.0 *	100.0
Farm Service Agency	16.8	25.2	15.5	26.3 c	16.2	100.0
Individuals and others	16.3	15.9	12.8	14.2	40.8	100.0
All lenders	14.3	17.2	14.0	23.2	31.2	100.0

1/ Includes nonfamily operations, limited resource, retirement, and residential/lifestyle farms.

CV=(Standard Error/Estimate)*100. *=CV is between 25 and 50. #=CV is between 50 and 75. c=CV is greater than 75. Values with a CV<=25 are unmarked.

Source: 1999 Agricultural Resource Management Study, Economic Research Service, USDA.

Most Farms Have One Primary Lender

Most farms have the bulk of their credit needs provided by a primary lender—a lender or related group of lenders that supply more than 50 percent of the borrower's total debt. Only about 1 percent of indebted farms did not report a primary lender. Commercial banks are the most common primary lender for indebted farm operators. At the end of 1999, banks were the primary lender for half of all indebted farm operators (table A-4). The FCS was the primary source of credit for 15 percent of indebted farm operators. Other institutional lenders were reported as primary lenders for smaller shares of indebted farmers. FSA was the primary lender for 3 percent of indebted operations, while life insurance companies were primary lenders for less than 1 percent.

The individuals and others group was the primary lender for 30 percent of farm operators. This group largely consists of merchants, dealers, and other credit suppliers for whom the provision of financing is incidental to the primary transaction. Nonreal estate financing activities of these nontraditional lenders have increased in recent years, driven mainly by favorable credit terms offered by machinery manufacturers and input suppliers. Anecdotal evidence suggests that these units are expanding the range of products offered, as they attempt to become more complete providers of farm credit.

Farm operators appear to be extremely loyal to their primary lenders, relying on them almost exclusively for their financing needs. For each primary lender, farm operators owed 85 to 92 percent of their total reported debt to that primary lender group. FSA and life insurance company borrowers are more likely to get credit from additional sources. Life insurance companies primarily lend against real estate, so their borrowers' operating credit must come from other sources, most often banks.

FCS Portfolio Concentrated, but Borrowers More Financially Secure

The average gross cash incomes of indebted operators relying on FCS as their primary lender increased from 1997 to 1999, while the average gross incomes of bank borrowers declined. Average gross cash income of FCS borrowers rose from about \$173,000 in 1997 to \$185,500 in 1999, while average gross cash income for bank borrowers slipped from about \$108,000 to less than \$101,700. Life insurance borrowers reported 1999 gross cash income of about \$260,000, the largest of any specified lender group. Borrowers relying on individuals and others for credit reported less than \$78,000 in gross cash income, the smallest of any primary lender group.

Because FCS credit is concentrated in fewer and larger farm operations, the overall quality of its farm loan portfolio will be affected by the financial performance of fewer farm operations than that of the commercial banking industry. This suggests that the more highly concentrated FCS portfolio may carry higher relative risk than the more diversified farm debt portfolio of commercial banks.

However, since FCS debt is more concentrated in larger operations, its borrowers on average tend to be more financially secure, compared with indebted farm operators relying on other creditors as their primary lender. Indebted farms borrowing primarily from the FCS had higher net worth and somewhat lower leverage ratios than all indebted borrowers. FCS borrowers had an average net worth exceeding \$650,000, based on their reporting of owned assets valued at almost \$810,000 and about \$156,600 in debt. Bank borrowers had an average net worth of less than \$415,000 based on ownership of assets valued at about \$525,000 and debt of less than \$110,000. Among the major primary lender categories, the average debt-to-asset ratio for FCS borrowers is among the lowest at 0.195. FSA borrowers and those with no primary lender are the most highly leveraged, with average debt-to-asset ratios in excess of 0.29.

Comparison of indebted operations by financial performance measure lends support to the contention that FCS borrowers are more financially secure than are farmers relying on banks or other creditors as their primary lenders. About 51 percent of all indebted farms were classified as being in a favorable financial position for 1999, indicating positive net farm income and a debt-to-asset ratio less than 0.40, while nearly 10 percent of all indebted farms were classified as vulnerable. Among indebted farms with a primary lender, more than 58 percent of FCS borrowers were considered favorable, the highest share for any lender, and only 5 percent were classified as vulnerable, the lowest for any lender. In contrast, only 50 percent of bank borrowers were classified as favorable, while almost 11 percent were considered vulnerable.

Borrowers' Use of Debt Repayment Capacity Differs

While the previous sections focused on the financial condition of indebted farm operators at the end of 1999, analysis of farmers' use of debt repayment capacity provides additional insight concerning the ability of indebted farm operators to service their current debt loads. Debt repayment capacity utilization (DRCU) for the farm sector, as presented previously in this publication, is expected to rise from 60 percent in 2000 to 65 percent in 2001. DRCU is defined as the ratio of actual farm debt to the maximum feasible debt that could be supported by the current farm income of the sector (3). As described elsewhere, DRCU provides an historical overview of farm operators' use of credit capacity from 1970 through 2001.

Data collected in the 1999 ARMS provide for a more detailed analysis of DRCU, allowing the influence of off-farm income, family withdrawals (living expenses), and payment of estimated income taxes to be included in the calculation of income available for debt coverage. The maximum principal and interest payment that a farmer could make based on total household income, and the maximum loan that the payment could service, can be estimated more precisely for farmers borrowing from each primary lender. Comparison of actual total liabilities with maximum debt supportable by income from all sources gives a more comprehensive measure of each respondent's individual

Table A-3—Selected financial measures of indebted farms, by debt-to-asset ratio, 1999

	All indebted farms	Debt-to-asset ratio		
		Less than 0.4	0.4 to 0.70	More than 0.70
Number of indebted farms	908,907	718,617	142,205	47,406
Percent of indebted farms	100.0	79.1	15.7	5.2
Percent of farm debt	100.0	60.2	30.0	9.8
Share of the total debt owed to:		<i>Percent</i>		
Farm Credit System	100.0	66.1	25.8	8.1
Commercial banks	100.0	58.5	31.4	10.0
Life insurance companies	100.0	52.5	34.8	12.7 *
Farm Service Agency	100.0	40.4	45.6	14.0
Individuals and others	100.0	62.8	27.3	9.9
All lenders	100.0	60.2	30.0	9.8
Average:				
Debt/asset ratio (percent)	20.4	15.2	48.2	85.1
Term debt coverage ratio 1/	2.2	3.4	1.4	1.0
Financial measures of borrowers (averages):		<i>Dollars</i>		
Total assets	561,440	605,765	443,778	250,507
Total lender debt	118,365	90,099	226,697	223,196
Net worth	443,075	515,666	217,081	27,311
Gross cash income	110,833	110,352	120,024	92,063
Net farm income	19,744	21,429	16,677	3,670 #
Debt per farm:				
Farm Credit System	23,295	19,476	38,375	36,280 *
Commercial banks	55,165	40,875	110,666	105,332
Life insurance companies	2,663	1,768 *	5,927 *	6,473 #
Farm Service Agency	5,692	2,904	16,601 *	15,320
Individuals and others	31,571	25,076	55,101	59,792 *
All lenders	118,365	90,099	226,697	223,196

1/ Term debt coverage ratio = (Net farm income + nonfarm income + depreciation + interest on term debt + interest on capital leases - total income tax expense - family living expense) / (Scheduled principal and interest payments on term debt + scheduled principal and interest payments on capital leases).

CV=(Standard Error/Estimate)*100. *=CV is between 25 and 50. #=CV is between 50 and 75. Values with a CV<=25 are unmarked.

Source: 1999 Agricultural Resource Management Study, Economic Research Service, USDA.

DRCU. This analysis does not include any nonfarm debt owed by the farm operator's household.

ARMS data indicate that DRCU averaged 42 percent for all indebted farms in 1999, an improvement from its 1997 level of 56 percent. This was largely due to improving levels of income, especially off-farm income, coupled with stable debt loads. Operators identifying banks as their primary lender owed about 40 percent of the debt that they could service with current income from all sources, while DRCU for FSA borrowers approached 53 percent. FCS borrowers were using about 44 percent of available credit lines.

Farmers can often meet temporary income shortfalls with savings and liquidation of assets. However, if DRCU exceeds 1.2, meaning that the operation owes 20 percent more debt than can be serviced with current income, savings and inventory liquidation may be insufficient to cover this shortfall, and this debt may be at risk of default. About 20 percent of operations reporting debt outstanding at the end of 1999 had DRCU greater than 1.2, but these farms owed 32 percent of all debt. This is an improvement from 1997, when 35 percent of indebted farm operators had DRCU greater than 1.2 and these operations owed 48 percent of all debt.

Among indebted operators with a primary lender, FCS borrowers appear, on average, to have the least difficulty in generating sufficient cash flow to service current debt loads. Only 17 percent of FCS borrowers were classified as high DRCU, and these operators owed 30 percent of FCS debt. About 20 percent of bank borrowers were in the high DRCU group, and these farms accounted for 32 percent of debt owed to banks.

Conclusion

The farm sector balance sheet shows a modest amount of leverage, with a debt-to-asset ratio of 16 percent at the end of 1999. However, ARMS data indicate that 58 percent of farms did not report any debt outstanding at the end of 1999. When these operations are excluded, the debt-to-asset ratio

climbs to over 20 percent for indebted farm operators. Debt is concentrated in larger farms and more leveraged farms. The 21 percent of indebted farms with debt-to-asset ratios exceeding 0.40 owe over 40 percent of all farm debt. Many of these are large farms with large debt burdens that had favorable financial performance measures through the end of 1999.

While most financial performance measures for indebted farm operations have shown improvement since 1997, significant numbers of highly leveraged farms could experience deteriorating financial conditions in an environment of continuing low commodity prices. Of greatest concern is the 10 percent of farm debt owed by operations with debt-to-asset ratios exceeding 0.70. This high-risk group is most likely to default in the event of a downturn in farm economic conditions. Farm debt is also highly concentrated in certain lender groups, with commercial banks and the Farm Credit System being the primary creditors for 65 percent of farm operators. Borrowers of the FCS were found to be more financially secure than those of other identified lender groups.

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Table A-4—Selected financial measures, all indebted farms, by primary lender, 1999 1/

	Farm Credit System	Banks	Farm Service Agency	Individuals and others	No primary lender	All indebted farms 2/
<i>Percent</i>						
Share of indebted operators borrowing primarily from:	14.7	50.1	3.1	30.3	1.1	100.0
<i>Dollars per farm</i>						
Balance sheet:						
Total assets	808,584	522,108	568,558	465,018	1,108,867	561,440
Total lender debt	156,621	109,243	164,572	96,934	319,253	118,365
Net worth	651,963	412,865	403,986	368,084	789,614	443,075
Income Statement:						
Gross cash income	185,459	101,645	137,543	77,874	275,660	110,833
Net farm income	34,570	17,506	31,702 *	13,369	54,295 *	19,744
<i>Percent</i>						
Solvency:						
Debt-to-asset ratio	19.5	20.2	29.4	19.3	29.5	20.4
Repayment capacity:						
Term debt coverage ratio	2.5	2.2	2.3	2.0	2.2	2.2
Borrower financial performance:						
Favorable 3/	58.1	49.9	52.2	50.4	59.4	51.4
Marginal income 3/	26.3	31.4	na	35.2	na	30.8
Marginal solvency 3/	10.3	7.8	24.5	5.8 *	na	8.2
Vulnerable 3/	5.3	10.9	na	8.6	na	9.6
Debt repayment capacity utilization:						
Average DRCU	44.3	40.2	52.9	36.6	70.0	41.6
Farms with DRCU > 120 percent:						
Percent of farms	17.0	20.3	17.7	20.3	25.1 *	19.9
Percent of debt	29.6	32.0	23.1 *	32.9	38.7	32.4

1/ A lender is considered to be the primary lender if more than 50 percent of the borrower's debt is owed to that lender group. 2/ Due to small sample size, data for operations reporting life insurance companies as primary lender are not shown separately, but are included in average for all indebted farms. 3/ Favorable = net farm income is > 0 and the debt-to-asset ratio is <= to .40; marginal income = net farm income is <= 0 and the debt-to-asset ratio is <= to .40; marginal solvency = net farm income is > 0 and the debt-to-asset ratio is > .40; vulnerable = net farm income is <= 0 and the debt-to-asset ratio is > .40.

na = Not available due to insufficient number of observations. CV=(Standard Error/Estimate)*100. *=CV is between 25 and 50. Values with a CV<=25 are unmarked.

Source: 1999 Agricultural Resource Management Study, Economic Research Service, USDA.

Do Nonlocal Banks Hurt Rural Economies?

by Robert N. Collender¹

The restructuring of commercial banking has heightened interest in its economic consequences both for the economy as a whole and for those most likely to bear adverse consequences: small businesses, small banks, and rural areas. Farm-dependent areas represent a confluence of these vulnerabilities. Previous research provides evidence on the interdependence of geographic restrictions on bank activities and economic growth at the national and state levels. This article presents evidence linking the relaxation of bank regulation, nonlocal bank entry, and subsequent changes in local economic growth. While metropolitan and nonmetropolitan areas generally benefit after geographic deregulation of banking, the impact on farm-dependent areas is more ambiguous.

Introduction

The restructuring of U.S. commercial banking has heightened interest in its economic consequences both for the economy as a whole and for those businesses and areas most likely to bear adverse consequences: small businesses, small banks, and rural areas (6, 8). Rural areas, especially those traditionally served by unit banks, have a long history of fear, suspicion, and antipathy toward bank consolidation and nonlocal control. Many rural residents and business people expect the current restructuring to harm their communities despite fairly compelling theoretical and empirical evidence that at least some degree of liberalization provides considerable overall economic benefits. These fears arise in part from northern European agrarian traditions that emphasized the need to limit banking firms. Regardless of the economic merits of these beliefs, they undergird support for restrictions on banking activities and remain politically important.²

This article reports on recent research by Collender and Shaffer that relates the relaxation of geographic restrictions on bank activity and the entry of nonlocally owned banks to subsequent economic growth in local markets (4). The process of relaxing or removing geographic restrictions is also called geographic liberalization. We define local markets as metropolitan statistical areas (MSA's) or nonmetropolitan counties. Locally-owned banks are those headquartered in the local market, while nonlocally-owned banks are those headquartered outside of the local market. To understand the potential impacts of bank restructuring on local growth, one must start with an understanding of (a) the unique characteristics of small, local banks, (b) the impacts of geographic liberalization and consolidation on bank behavior, and (c) the relationship between banking and economic growth. This article proceeds by reviewing each of these three areas. It then describes recent findings relating local economic growth in metropolitan, nonmetropolitan, and farm-dependent areas to bank restructuring.

Why Local Banks Might Be Different

Small, local banks may behave differently from larger and nonlocal banks for a variety of reasons, including superior access to local information, greater commitment to local prosperity, and differences in technology (cost structure) or risk management related to bank size. Under regulations limiting the geographic span of bank activity, the behavior of local banks may also reflect both their degree of protection from competition and their limited lending options.

Superior Access to Local Information. Many bank loan customers, especially small businesses, are informationally opaque—that is, their financial conditions are not easy to assess or monitor. Bank lending is information intensive, relying on essentially privately developed data and analysis to assess loan requests and to monitor borrowers' financial conditions and their adherence to loan terms. The intensity of initial information gathering and subsequent monitoring implies that the location of a bank's offices relative to its borrowers may be important because the costs of these activities increase with distance. Deposit and transaction accounts can also provide low-cost financial data valuable for assessing loan requests and monitoring loan customers. Since deposit relations are largely local, they strengthen the likelihood that locally active banks will have an information advantage over other lenders in serving these informationally opaque borrowers.

Greater Commitment to Local Prosperity. One premise of geographic restrictions on bank activity is that tying the fortunes of banks and bank managers to specific locations will increase their commitment to achieving local economic prosperity. Calomiris argued that established middle-class agricultural interests have historically favored entry restrictions because such restrictions create location-specific bank capital that impedes the shifting of bank lending to more lucrative locations in the short run (3). Since creditworthiness relies on wealth and wealth can depend, at times, on the continued availability of loans, location-specific banks provide a safety net in the short run, even though in the long run they may prove unable to survive occasional severe market-wide shocks.

Differences in Technology, Costs, and Risk Management. While geographic restrictions may tie banks to local prosperity, these restrictions may also affect bank behavior. Both theoretical and empirical evidence suggests that small, independent banks, branching banks, and holding company

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² For example, Texas and Montana opted out of interstate branching and Colorado considered doing so as authorized in the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994. However, the Office of the Comptroller of the Currency (OCC, regulator of national banks) ruled that opting out does not prevent nationally chartered (as opposed to State-chartered) banks from branching across State lines. This ruling caused the Texas Commissioner of Banking to nullify rules prohibiting interstate branching since they put State-chartered banks at a competitive disadvantage.

affiliates use different technologies and face different costs related to lending, funding, general operations, and risk management. Such differences are likely to be most substantial in the smaller, less diversified economies that prevail in rural areas.

With respect to lending technology, smaller banks are more likely to rely on relationship lending while larger banks are more likely to undertake transactions-based lending. Relationship lending depends on detailed knowledge of a business, its owner's character and reputation, and its local market. In contrast, transaction-based lending is often collateral-based, relies on readily available and verifiable information, and relies on statistical underwriting based on large numbers of similar loans.

With respect to funding, small banks are much more likely to rely on deposits to fund loans and much less likely to use nonlocal, nondeposit funds than are larger banks (8). This reliance on local deposits reflects, in part, agency problems faced by small banks. Correspondent banks are, at times, unwilling to accept loans originated by small banks as collateral or may be reluctant to extend liquidity to small banks during periods of tight monetary policy. Economic theory and empirical evidence also suggest that the ability of small banks to raise deposits may constrain their lending activity and cause them to hold more cash and securities and fewer loans relative to banks less dependent on local deposits.

With respect to operating costs, small, independent banks may be more costly to establish and operate than either same-size bank branches or affiliates of bank holding companies (BHC's). Branches and BHC affiliates share some of their fixed costs with a larger asset base. Larger branching banks and holding company affiliates can also share resources at the company level, potentially increasing the returns to specialized human capital. In theory, such cost advantages would allow branches and holding company affiliates to provide services in remote areas. The dispersion of bank offices is consistent with such cost advantages.

With respect to risk management, banks that operate in relatively small and economically homogenous geographic areas cannot easily diversify the credit risks in their loan portfolios. To compensate for this inability to diversify, small banks on average hold more equity capital and liquid assets than larger banks.

Protection from Competition. Some protection from competition was an explicit part of geographic limits on banking activity, and empirical evidence indicates such protection affects bank behavior. The importance of banking as a source of revenue aligned the interests of State governments with those of established State-chartered banks with respect to limiting competition among banks and prohibiting operations by banks chartered in other States. Banks operating in protected markets are more likely to charge higher rates on loans, pay lower rates on deposits, and be inefficient.

Geographic Liberalization, Consolidation, and Bank Behavior

A large literature has studied the impact of restructuring on a variety of measures of bank performance (2). With successive liberalizations of geographic restrictions and the increased consolidation of commercial banking, researchers have focused on the relationship between the geographic span of bank activity and various measures of bank performance. Areas of such research include lending quantity and quality, operating efficiency, loan and deposit pricing, bank risk management (loan portfolio diversification), and the competitiveness of various industry segments—especially nonlocal and small community banks. Of particular interest to rural areas are the impacts of liberalization and consolidation on bank exercise of market power, lending to small business and agriculture, and small bank competitiveness.

Consolidation between banks operating in the same geographic areas increases local concentration, while that involving institutions with mutually exclusive territories is unlikely to affect local concentration directly. The potential of banks to exercise market power is of particular concern to rural areas since rural banking markets are on average significantly more concentrated than urban markets. Survey evidence indicates that households and small businesses overwhelmingly rely on financial institutions with a local physical presence. The physical barriers (e.g., distance) and economic barriers (e.g., limited overall market size) to effective competition in many rural areas are considerably greater than in urban areas. Despite the association between local measures of concentration and prices, some evidence points to a decrease in market power over time. Markets for banking services are increasingly contestable, in part, because the removal of geographic restrictions lowers barriers to entry in local markets. New delivery alternatives and changes in consumer behavior (ATM's, telephone banking, internet banking, and increased use of credit and debit cards) also increase the geographic span of bank activities.

The fact that rural businesses tend to be small and to rely on local banks might suggest that bank consolidation could reduce the credit available to small businesses. Large banks lend proportionately fewer assets to small businesses. However, countervailing forces imply that consolidation is not always bad for small borrowers, and empirical evidence indicates little cause for concern except for transitional disruptions. While consolidations of large organizations often reduce small business lending, most consolidations involving small banks increase rather than decrease small business lending. Consolidations among smaller banking organizations generally lead to a shift in assets to more small business loans. In rural areas, mergers among small- and medium-sized banking organizations have been more prevalent than in metropolitan areas, mitigating the adverse impact of consolidation on rural farms and small businesses. Even where consolidating banks reduce their small business lending, evidence suggests that other lenders, including newly chartered banks have a countervailing effect. Bank consolidation can also improve services to small customers during economic downturns, since large, complex banks are likely to be better diversified and therefore less vulnerable to

local conditions. Large banks or multibank holding companies may also have more funding alternatives and more options for raising capital.

If small banks are not fully competitive with large banks, then the larger banks could enjoy greater ability to exercise market power in smaller rural banking markets and consumer welfare could suffer. A loss of local control could also result in an outflow of local savings to large metropolitan centers except as limited by the Community Reinvestment Act (CRA), with small businesses facing reduced access to financial services. While little evidence of reduced competition exists, larger banks may have significant competitive advantages over smaller banks. These advantages arise from two sources: scale and diversification.

As indicated in this review, several factors suggest that nonmetropolitan areas could fare differently from metropolitan areas when geographic constraints on bank activity are lifted. For example, Calomiris provided historical evidence that efficiency costs imposed on local economies by limits on branching may be greater in rural areas (3). Bank-dependent borrowers in rural areas have faced high external finance costs due to scarce bank capital, cyclical and seasonal credit contractions, and additional costs when local banks failed because of inefficiently diversified portfolios. However, countervailing benefits to at least some rural interests may accompany geographic restrictions. Calomiris cited “loan” and “wealth” insurance. Recent research suggests the impact of market concentration may be ambiguous if it arises from competitive advantages in contestable markets, or if increased competition sufficiently increases the riskiness of bank lending. Moreover, loss of local control and a reduced commitment to local growth could lead to a reduction in relationship-based lending that is important to the creditworthiness and viability of many small businesses.

The Finance Sector and Economic Growth

A better indicator of the economic impact on local markets of liberalization and consolidation is their overall impact on economic growth. Such indicators as changes in the quantity of lending, pricing, or bank competitiveness are limited measures of efficiency because of the strong likelihood that the starting points themselves were inefficient. For example, an increase in small business lending following geographic liberalization may be consistent with either an efficiency gain or an efficiency loss. A gain might arise if pre-existing geographic restrictions induced conservative lending policies to compensate for inefficient diversification or allowed a local bank to exercise market power. Conversely, a loss might occur if funding expands for projects with high risk or negative expected net present value. Therefore, while direct measures of loan volume and pricing can provide valuable indicators of winners and losers from liberalization, it is not clear that they provide information about whether the result is economically efficient or socially desirable.

In recent years, researchers have found increasing support for the hypothesis that financial development precedes and facilitates economic growth. Of particular interest is the

work of Jayaratne and Strahan (7). They explored the relationship between the banking sector and economic growth in the context of the liberalization of branching restrictions by U.S. States. They provided evidence that real per capita growth rates, of both personal income and gross State product, increase significantly following intrastate branching reforms. Our work tests whether these relationships extend to the local market level. In particular, we explore the relationship between economic growth rates in local markets and geographic liberalization, market structure, and bank ownership structure using empirical models based on those that have already appeared in the finance and growth literature. We also test for differences in these relationships in metropolitan and nonmetropolitan areas.

We investigate hypotheses concerning the economic growth benefits associated with changes in bank ownership and bank market structure and their relation to metropolitan and nonmetropolitan markets. The empirical work reported below resembles other work in the finance and growth literature. Following Jayaratne and Strahan (hereafter J&S), we model the local growth impacts of changes in geographic regulations (7). We extend this model to consider the impacts of the location of bank office ownership (in-market or out-of-market) and the location of control of local bank deposits.

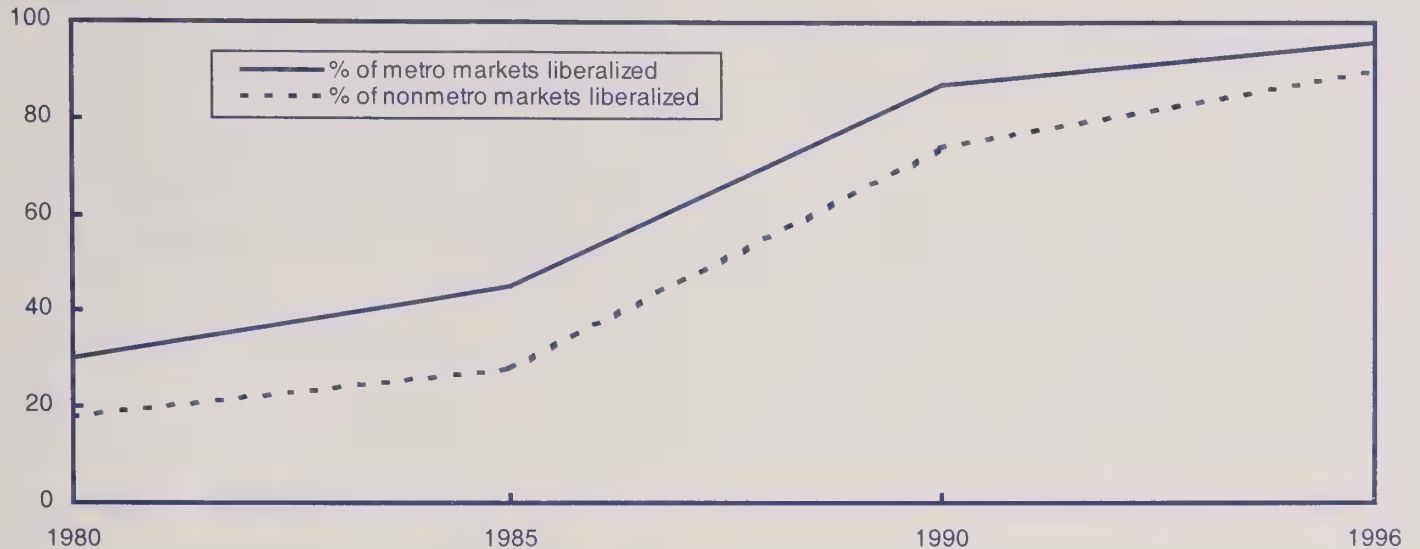
Local Economic Growth and Geographic Deregulation, Bank Market Structure, Bank Ownership, and Deposit Control. J&S model State-level economic growth as a function of geographic deregulation while controlling for time-specific growth shocks and State-specific growth trends. To isolate the impact of changes that may be associated with geographic liberalization, we augment J&S’s basic model in two stages. First, we control for local bank market concentration using the Herfindahl-Hirschman index (HHI) of bank deposits, which is the sum of squared market shares for all market participants. Next, we control for in-market and out-of-market ownership of bank offices and control of bank deposits. These variables allow us to distinguish whether the relationship between local growth and out-of-market control of banking activity, rather than other activities related to ownership of local bank offices, is specifically related to deposit control. Geographic deregulation has typically occurred in two stages (1). In the first stage, multibank holding companies (MBHC’s) may convert subsidiary banks into branches and may expand geographically through acquisition and conversion of existing banks. In the second stage, banks are allowed to expand geographically by establishing new (*de novo*) branches anywhere in the State.

This specification allows testing of hypotheses relating local economic growth to geographic liberalization, local market growth, and the loci of bank office ownership and of control of local deposits (in-market and out-of-market). First, we test for a statistically significant relationship between our explanatory variables and local economic growth, both jointly and individually:

Figure B-1a

Metropolitan banking markets liberalized earlier than nonmetropolitan banking markets

Percent

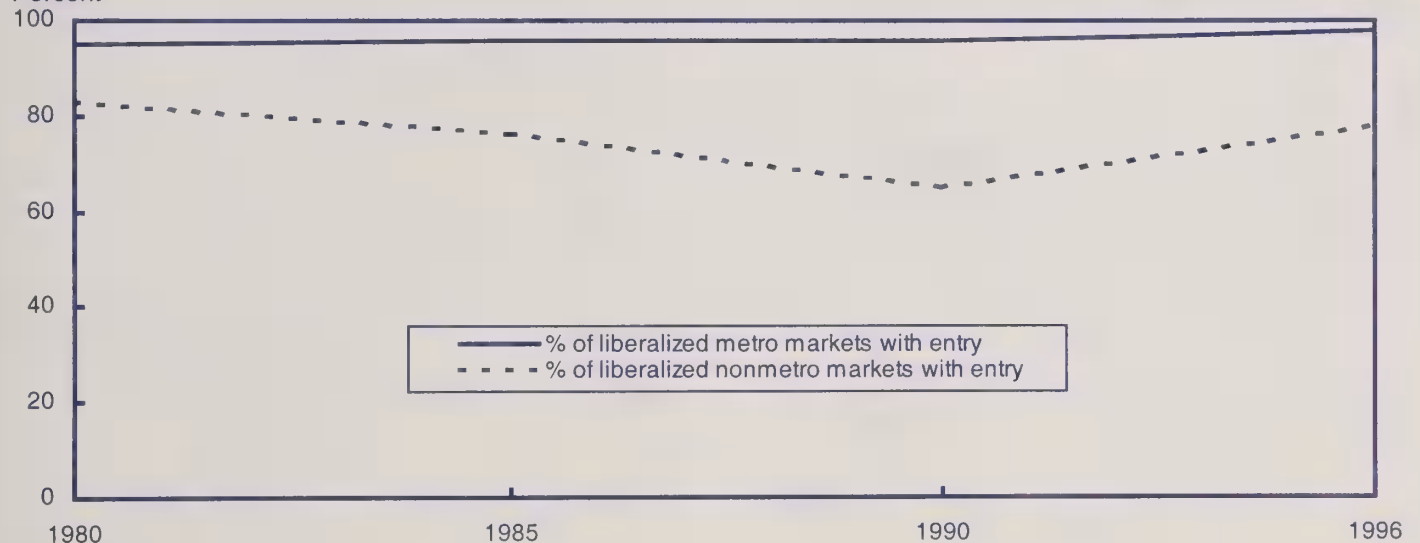


Source: (4).

Figure B-1b

And nonlocal entry occurred sooner after liberalization in metropolitan banking markets

Percent

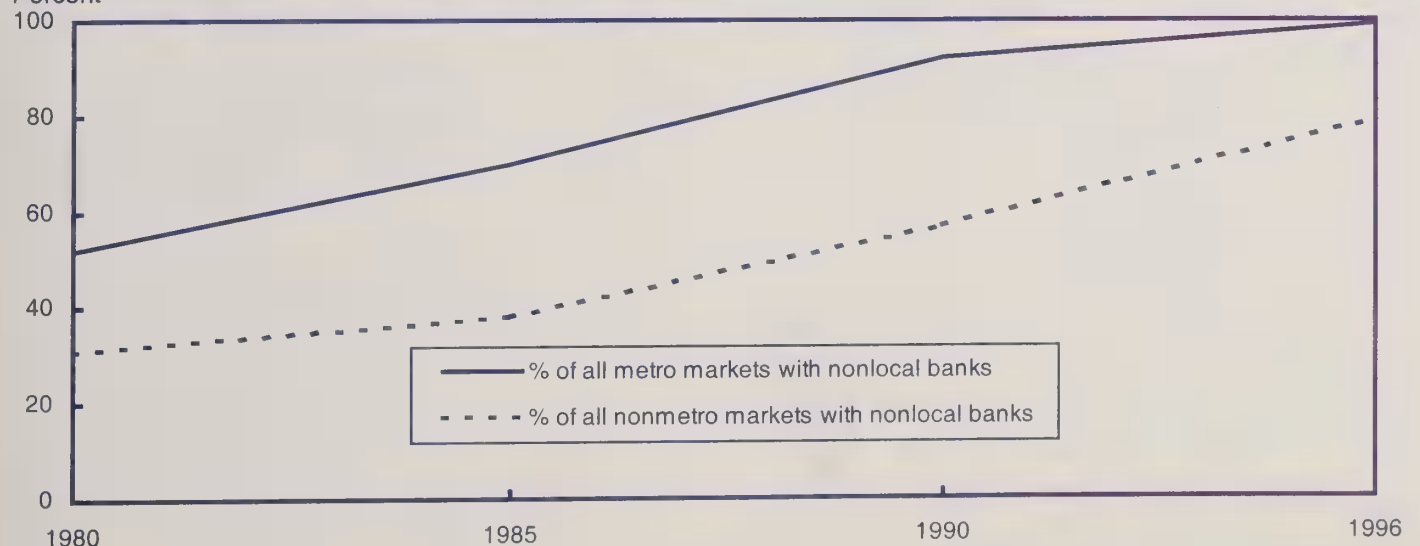


Source: (4).

Figure B-1c

Leading to relatively fewer nonmetropolitan banking markets with nonlocally owned bank offices

Percent



Source: (4).

- H1: Short-run, local economic growth is independent of bank deposit market concentration, the distribution of nonlocal and local bank office ownership, and the distribution of nonlocal and local control of local deposits.
- H2: Local growth is independent of bank deposit market concentration.
- H3: Local growth is independent of the number of local bank offices.
- H4: Local growth is independent of the quantity of local deposits.

Then, we test whether the coefficients on each pair of variables related to local and nonlocal control are the same. That is, we test whether the relationship of growth to nonlocally owned offices or nonlocally owned deposits is the same as the relationship of growth to locally owned bank offices or locally owned deposits.

- H5: The locus of local bank office ownership (in-market or out-of-market) is irrelevant to local growth.
- H6: The locus of control of local bank deposits (in-market or out-of-market) is irrelevant to local growth.

The results of the hypotheses tests directly address the concerns of nonmetropolitan areas regarding the potentially negative impact of loss of local control over bank capital and deposits.

Sample Statistics and Correlations. We separate our sample into metropolitan and nonmetropolitan markets. Univariate statistics and pairwise correlations reveal several distinguishing characteristics of these markets. During the period 1981-96, annual growth in real per capita personal income was about 0.15 percentage points faster in nonmetropolitan markets (1.58 percent per year) than metropolitan areas (1.43 percent), on average.

Compared with metropolitan markets, nonmetropolitan markets average far fewer bank offices (8 versus 152), higher market concentration (HHI of 4,190 versus 1,779), and far lower levels of total deposits (\$159 million versus \$6 billion). Standard deviations and coefficients of variation (ratios of the standard deviation to the mean) on these variables indicate that nonmetropolitan markets are more alike in both absolute and relative terms than are metropolitan markets, the latter being skewed by such megalopolises as New York, Los Angeles, and Chicago. About 25 percent of nonmetropolitan markets are defined by USDA as farm dependent. Farm dependent markets on average grew faster (2.16 percent per year), had fewer banks (4) and deposits (\$76 million), and were even more concentrated (HHI of 5,129) than other nonmetropolitan markets.

Nonmetropolitan markets have experienced geographic liberalization at a slower pace and entry by nonlocal firms has been less likely after liberalization. Figure B-1 graphs the rates of liberalization and entry into metropolitan and nonmetropolitan markets. The relatively slow rate of entry into nonmetropolitan markets is consistent with Calomiris' work on the political economy of geographic restrictions in banking (3). Despite these observations, control of local banking markets by out-of-market banks is surprisingly similar in nonmetropolitan and metropolitan markets: out-of-market banks controlled 27 percent of nonmetropolitan bank offices (versus 29 percent of metropolitan) and 26

percent of nonmetropolitan bank deposits (versus 28 percent of metropolitan).

Striking differences between rural and urban pairwise correlations appeared in one or two instances. The correlation between the numbers of in-market and out-of-market owned bank offices is 0.01 in nonmetropolitan areas but 0.48 in metropolitan markets. That is, in-market and out-of-market office numbers often exhibit similar structures in metropolitan markets but not in nonmetropolitan markets. A corresponding contrast arises in in-market vs. out-of-market controlled deposits. Table B-1 contains descriptive statistics.

Results

Model estimates are presented in table B-2 and results of hypotheses tests are presented in table B-3. The coefficients related to geographic liberalization remain positive, statistically significant, and economically important. The ratio of the impact of each stage of liberalization—first consolidations through holding company acquisitions and mergers and then *de novo* branching—is similar in nonmetro areas versus metro areas, with nonmetro areas experiencing about two-thirds the increase in growth experienced in metro areas. The results are quantitatively and qualitatively similar to earlier findings by J&S, but indicate a proportionately greater impact on metropolitan than on nonmetropolitan areas. This conclusion holds both in absolute and relative terms. Over the period covered by our data, 1981-96, real per capita personal income grew at an average annual rate of 1.43 percent in metropolitan markets and 1.58 percent in nonmetropolitan markets. Our results suggest that geographic liberalization was associated with an average increase in expected growth of about 85 percent in metropolitan markets and of about 56 percent in nonmetropolitan markets.

At a minimum, these findings may mitigate concerns that shifts toward nonlocal ownership of local bank offices or nonlocal control of local deposits might adversely affect local economic performance. Statistical hypothesis tests indicate that bank office numbers, bank deposits, and deposit market concentration jointly have a statistically significant association (at the 1-percent confidence level) with local economic growth (H1) in both metro and nonmetro markets. Individually, deposit market concentration maintains its statistically significant negative association (at the 5-percent confidence level) with local economic growth (H2) in metro but not in nonmetro markets. Statistical tests indicate that the number of bank offices (H3) and the amount of bank deposits (H4) are significantly related to economic growth in nonmetro areas only, but there is no evidence that differences in the locus of ownership of bank offices (H5) or control of bank deposits (H6) affects these associations. There is, however, weak evidence (statistically significant at the 10-percent confidence level) that local growth in metropolitan markets is more negatively associated with out-of-market bank office ownership than in-market ownership (H5).

Farm-Dependent Counties. Much of the concern about nonlocal bank ownership has agrarian roots. To shed further light on these concerns, we report results for farm-dependent

Table B-1—Metro and nonmetro sample statistics, 1981-96

Variable	Metro (4,272 obs.)		Nonmetro (36,128 obs.)		Farm Dependent (8,848 obs.)	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Annual growth in real per capita personal income (percent)	1.43	2.4	1.58	7.4	2.16	11.9
Locally owned bank offices	118.02	281.899	5.52	5.048	3.409	2.940
Nonlocally owned bank offices	34.30	75.040	2.36	4.175	0.995	1.860
Locally controlled deposits (in millions)	4,046	14,081	94	98	61	54
Nonlocally controlled deposits (in millions)	781	2,452	34	68	15	42
Percent of markets allowing mergers and acquisitions	69		58		52	
Percent of markets allowing de novo branching	52		37		31	
Market concentration index	1,779	793	4,190	2,378	5,124	2,859
Ratio of bank offices owned out-of-market	0.294	0.287	0.275	0.348	0.245	0.357
Ratio of local bank deposits controlled out-of-market	0.284	0.307	0.258	0.354	0.222	0.359

Source: (4).

Table B-2—Sign and statistical significance of estimated relations

	Real per capita income growth (weighted by total personal income)		
	Metro	Nonmetro	Farm-dependent counties
Locally owned bank offices	+ / --	+ / *	+ / --
Nonlocally owned bank offices	- / ***	+ / **	+ / --
Locally controlled deposits	+ / ***	- / *	- / ***
Nonlocally controlled deposits	- / --	- / *	- / --
De novo branching allowed	+ / **	+ / ***	+ / --
Mergers and acquisitions allowed	+ / *	+ / *	- / *
Market concentration index	- / **	- / --	- / **

T-statistic in parentheses.

Two-tailed significance levels:

* significant at 1 percent ($t > 2.550$)** significant at 5 percent ($2.550 > t > 1.960$)*** significant at 10 percent ($1.960 > t > 1.645$)

-- not statistically significant

Source: (4).

Table B-3— Hypothesis tests from weighted regressions for short-run models

Hypothesis	Metro	Nonmetro	Farm-dependent counties
H1: bank ownership and market structure	■	*	--
H2: concentration	**	--	**
H3: office ownership	--	*	--
H4: deposit control	--	*	--
H5: office ownership differences	***	--	--
H6: deposit control differences	--	--	--

Two-tailed significance levels:

* statistically significant at 1 percent

** statistically significant at 5 percent

*** statistically significant at 10 percent

-- not significant

Source: (4).

rural counties (tables B-2 and B-3). USDA defines counties as farm-dependent if farm income averages more than 20 percent of total income from 1987 to 1989 (5). Over the 1981-96 period, real per capita personal income grew in farm-dependent markets by 2.16 percent on average each year. The results differ in striking ways from those for other rural or urban banking markets, lend support to Calomiris' wealth insurance hypothesis, and suggest that an empirical basis may exist for agrarian misgivings about liberalization. In contrast to other rural markets, results from the short-run models indicate that reduced growth is associated with geographic liberalization in farm-dependent markets (H1). However, this result is not robust when local business cycles are considered (4). In addition, the negative association between deposit market concentration and growth is stronger in farm-dependent markets than in other rural markets (H2). Each of these results is statistically significant at the 5-percent confidence level. As in other rural markets, there is no evidence that the locus of ownership of local bank offices or the locus of deposit control affects short-run growth rates.

Conclusions and Policy Implications

Local banks may behave differently from nonlocal banks because of superior access to local information, greater commitment to local prosperity, and differences in technology or risk management, both of which tend to be related to bank size. A large body of empirical research exists on the impacts of deregulation, concentration, and out-of-market entry on bank behavior. This research has focused on changes in loan portfolio size, allocation, and quality, operating efficiency, risk management, loan and deposit pricing, and small bank competitiveness following liberalization or bank consolidations. Research results provide evidence that liberalization often affects bank behavior and that large banks often behave differently from small banks. However, this research does less to address the underlying issue of whether these differences are beneficial or detrimental to local economies.

Another line of research has sought to relate financial market structures to economic growth. Both international and domestic studies have found important positive linkages between financial markets and growth. The research presented here extends this line of inquiry by relating bank market structure and regulatory change to economic growth at the local market level. A central issue is the distribution of the previously documented positive relationship between geographic deregulation and State-level growth among metropolitan and nonmetropolitan areas. Other important issues revolve around the impacts of bank market concentration, out-of-market ownership of local bank offices, and out-of-market control of local deposits. To illuminate these issues, we estimated separate models for metropolitan, nonmetropolitan, and farm-dependent markets. The latter markets are a subset of nonmetropolitan markets and are of interest because of the historic link between these markets and restrictions on bank branching.

Our results generally support the importance of the linkage between geographic liberalization and local growth in the short run. Estimates of this impact in metropolitan markets ranged as high as 1.22 percent per year or 85 percent of

expected growth rates. Nonmetropolitan markets exhibited a smaller but still important impact of 0.88 percent per year or 56 percent of expected growth rates. While tests indicated that market structure was statistically significant, the location of neither bank office ownership nor deposit control was statistically related to short-run growth in nonmetropolitan areas. However, in metropolitan areas, out-of-market ownership of bank offices was associated with lower short-run growth rates, though the magnitude of this effect is economically small.

Results from farm-dependent markets, however, remind us that these results reflect average and not universal associations. In farm-dependent markets, liberalization was associated with a decrease in short-run growth, and initial levels of out-of-market bank ownership were associated with a fall in long-run growth in the more recent period. However, this result is not statistically robust when local business cycles are taken into consideration. These findings suggest that out-of-market bank mergers or acquisitions need not, *ceteris paribus*, impair local economic growth, and may even have beneficial effects in many rural markets.

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Appendix table 1—Total farm business debt by lender, December 31, 1983-2000

	Debt owed to reporting institutions					Individuals and others 1/	Total debt
	Farm Credit System	Commercial banks	Farm Service Agency	Life insurance companies	Total institutional		
Million dollars							
1983	63,710	45,422	21,428	11,668	142,228	48,842	191,070
1984	64,688	47,245	23,262	11,891	147,086	46,701	193,787
1985	56,169	44,470	24,535	11,273	136,447	41,152	177,599
1986	45,909	41,621	24,138	10,377	122,044	34,926	156,970
1987	40,030	41,130	23,553	9,355	114,069	30,342	144,411
1988	37,211	42,742	21,879	9,039	110,873	28,694	139,567
1989	36,440	44,929	19,047	9,113	109,529	28,330	137,859
1990	35,773	47,556	17,014	9,704	110,046	27,916	137,962
1991	35,527	50,271	15,253	9,546	110,598	28,620	139,218
1992	35,753	51,669	13,538	8,765	109,725	29,327	139,052
1993	35,439	54,533	12,076	8,985	111,035	30,929	141,964
1994	35,777	57,809	11,485	9,025	114,096	32,704	146,800
1995	37,324	60,025	10,147	9,092	116,588	34,182	150,769
1996	39,745	61,620	9,316	9,468	120,149	35,925	156,074
1997	42,341	66,952	8,655	9,699	127,647	37,766	165,413
1998	45,699	70,011	8,067	10,723	134,499	38,363	172,862
1999	46,218	71,792	7,883	11,490	137,382	39,049	176,431
2000P	47,611	74,191	7,429	11,806	141,037	39,542	180,579
Percent change in year							
1983	-0.8	8.4	0.7	-1.4	2.2	-1.5	1.2
1984	1.5	4.0	8.6	1.9	3.4	-4.4	1.4
1985	-13.2	-5.9	5.5	-5.2	-7.2	-11.9	-8.4
1986	-18.3	-6.4	-1.6	-8.0	-10.6	-15.1	-11.6
1987	-12.8	-1.2	-2.4	-9.8	-6.5	-13.1	-8.0
1988	-7.0	3.9	-7.1	-3.4	-2.8	-5.4	-3.4
1989	-2.1	5.1	-12.9	0.8	-1.2	-1.2	-1.2
1990	-1.8	5.8	-10.7	6.5	0.5	-1.4	0.1
1991	-0.7	5.7	-10.3	-1.6	0.5	2.5	0.9
1992	0.6	2.8	-11.2	-8.2	-0.8	2.5	-0.1
1993	-0.9	5.6	-10.8	2.5	1.2	5.5	2.1
1994	1.0	6.0	-4.9	0.5	2.8	5.7	3.4
1995	4.3	3.8	-11.7	0.7	2.2	4.5	2.7
1996	6.5	2.7	-8.2	4.1	3.4	5.1	3.5
1997	6.5	8.7	-7.1	2.4	3.2	5.1	6.0
1998	7.9	4.6	-6.7	10.6	5.4	1.6	4.5
1999	1.1	2.5	-2.2	7.2	2.1	1.8	2.1
2000P	3.0	3.3	-5.8	2.8	2.7	1.3	2.4
Percentage distribution of total debt							
1983	33.3	23.8	11.2	6.1	74.4	25.6	100.0
1984	33.4	24.4	12.0	6.1	75.9	24.1	100.0
1985	31.6	25.0	13.8	6.3	76.8	23.2	100.0
1986	29.2	26.5	15.4	6.6	77.7	22.3	100.0
1987	27.7	28.5	16.3	6.5	79.0	21.0	100.0
1988	26.7	30.6	15.7	6.5	79.5	20.5	100.0
1989	26.4	32.6	13.8	6.6	79.5	20.5	100.0
1990	25.9	34.5	12.3	7.0	79.8	20.2	100.0
1991	25.5	36.1	11.0	6.9	79.4	20.6	100.0
1992	25.7	37.2	9.7	6.3	78.9	21.1	100.0
1993	25.0	38.4	8.5	6.3	78.2	21.8	100.0
1994	24.4	39.4	7.8	6.2	77.7	22.3	100.0
1995	24.8	39.8	6.7	6.1	77.3	22.7	100.0
1996	25.5	39.4	6.0	6.1	77.0	23.0	100.0
1997	25.6	40.5	5.2	5.9	77.2	22.8	100.0
1998	26.4	40.5	4.7	6.2	77.8	22.2	100.0
1999	26.2	40.7	4.5	6.5	77.9	22.1	100.0
2000P	26.4	41.0	4.1	6.5	78.1	21.9	100.0

P = Preliminary. 1/ In addition to individuals, this category includes land for contract, merchants' and dealers' credit, etc., CCC storage and drying facilities loans, and Farmer Mac loans.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, Farm Credit System, Farm Service Agency, U.S. Census of Agriculture Finance Surveys, and U.S. Department of Agriculture farm operator surveys.

Appendix table 2—Real estate farm business debt by lender, December 31, 1983-2000

	Debt owed to reporting institutions						CCC storage and drying facilities	Total real estate
	Farm Credit System	Farm Service Agency	Life insurance companies	Commercial banks	Total institutional	Individuals and others 1/		
	Million dollars							
1983	44,318	8,573	11,668	8,347	72,906	29,388	888	103,182
1984	46,596	9,523	11,891	9,626	77,636	28,438	623	106,697
1985	42,169	9,821	11,273	10,732	73,994	25,775	307	100,076
1986	35,593	9,713	10,377	11,942	67,725	22,660	123	90,408
1987	30,646	9,430	9,355	13,541	62,972	19,380	46	82,398
1988	28,445	8,980	9,039	14,434	60,898	16,914	21	77,833
1989	26,896	8,203	9,113	15,685	59,898	16,068	12	75,978
1990	25,924	7,639	9,704	16,288	59,556	15,169	7	74,732
1991	25,305	7,041	9,546	17,417	59,308	15,632	4	74,944
1992	25,408	6,394	8,765	18,757	59,324	16,095	2	75,421
1993	24,900	5,837	8,985	19,595	59,317	16,719	0	76,036
1994	24,597	5,465	9,025	21,079	60,166	17,514	0	77,680
1995	24,851	5,055	9,092	22,277	61,275	18,012	0	79,287
1996	25,730	4,702	9,468	23,276	63,176	18,481	0	81,657
1997	27,098	4,373	9,699	25,240	66,409	18,950	0	85,359
1998	28,888	4,073	10,723	27,168	70,852	18,763	0	89,615
1999	30,302	3,872	11,490	29,799	75,463	18,763	0	94,226
2000P	31,483	3,557	11,806	31,821	78,667	18,668	0	97,335
	Percent change in year							
1983	1.5	3.3	-1.4	10.3	2.2	0.2	-21.2	1.3
1984	5.1	11.1	1.9	15.3	6.5	-3.2	-29.8	3.4
1985	-9.5	3.1	-5.2	11.5	-4.7	-9.4	-50.7	-6.2
1986	-15.6	-1.1	-7.9	11.3	-8.5	-12.1	-59.9	-9.7
1987	-13.9	-2.9	-9.8	13.4	-7.0	-14.5	-62.6	-8.9
1988	-7.2	-4.8	-3.4	6.6	-3.3	-12.7	-54.9	-5.5
1989	-5.4	-8.6	0.8	8.7	-1.6	-5.0	-43.9	-2.4
1990	-3.6	-6.9	6.5	3.8	-0.6	-5.6	-43.8	-1.6
1991	-2.4	-7.8	-1.6	6.9	-0.4	3.0	-41.8	0.3
1992	0.4	-9.2	-8.2	7.7	0.0	3.0	-47.6	0.6
1993	-2.0	-8.7	2.5	4.5	0.0	3.9	-100.0	0.8
1994	-1.2	-6.4	0.5	7.6	1.4	4.8	0.0	2.2
1995	1.0	-7.5	0.7	5.7	1.8	2.8	0.0	2.1
1996	3.5	-7.0	4.1	4.5	3.1	2.6	0.0	3.0
1997	5.3	-7.0	2.4	8.4	5.1	2.5	0.0	4.5
1998	6.6	-6.9	10.6	7.6	6.7	-1.0	0.0	5.0
1999	4.9	-4.9	7.2	9.7	6.5	0.0	0.0	5.1
2000P	3.9	-8.1	2.8	6.8	4.2	-0.5	0.0	3.3
	Percentage distribution of debt							
1983	43.0	8.3	11.3	8.1	70.7	28.5	0.9	100.0
1984	43.7	8.9	11.1	9.0	72.8	26.7	0.6	100.0
1985	42.1	9.8	11.3	10.7	73.9	25.8	0.3	100.0
1986	39.4	10.7	11.5	13.2	74.8	25.1	0.1	100.0
1987	37.2	11.4	11.4	16.4	76.4	23.5	0.1	100.0
1988	36.5	11.5	11.6	18.5	78.2	21.7	0.0	100.0
1989	35.4	10.8	12.0	20.6	78.8	21.1	0.0	100.0
1990	34.7	10.2	13.0	21.8	79.6	20.3	0.0	100.0
1991	33.8	9.4	12.7	23.2	79.1	20.9	0.0	100.0
1992	33.7	8.5	11.6	24.9	78.7	21.3	0.0	100.0
1993	32.8	7.7	11.8	25.8	78.0	22.0	0.0	100.0
1994	31.7	7.0	11.6	27.1	77.5	22.6	0.0	100.0
1995	31.3	6.4	11.5	28.1	77.3	22.7	0.0	100.0
1996	31.5	5.8	11.6	28.5	77.4	22.6	0.0	100.0
1997	31.8	5.1	11.4	29.6	77.8	22.2	0.0	100.0
1998	32.2	4.5	12.0	30.3	79.1	20.9	0.0	100.0
1999	32.2	4.1	12.2	31.6	80.1	19.9	0.0	100.0
2000P	32.3	3.7	12.1	32.7	80.8	19.2	0.0	100.0

P = Preliminary. 1/ Including Farmer Mac loans.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, Farm Credit System, Farm Service Agency, U.S. Census of Agriculture Finance Surveys, and U.S. Department of Agriculture farm operator surveys.

Appendix table 3—Nonreal estate farm business debt by lender, December 31, 1983-2000

	Debt owed to reporting institutions				Individuals and others	Total nonreal estate	CCC crop loans
	Commercial banks	Farm Credit System	Farm Service Agency	Total institutional			
Million dollars							
1983	37,075	19,392	12,855	69,322	18,566	87,888	10,576
1984	37,619	18,092	13,740	69,451	17,640	87,091	8,428
1985	33,738	14,001	14,714	62,453	15,070	77,523	17,598
1986	29,678	10,317	14,425	54,420	12,143	66,563	19,190
1987	27,589	9,384	14,123	51,096	10,916	62,012	15,120
1988	28,309	8,766	12,899	49,974	11,760	61,734	8,902
1989	29,243	9,544	10,843	49,631	12,250	61,881	5,225
1990	31,267	9,848	9,374	50,490	12,740	63,230	4,377
1991	32,854	10,222	8,213	51,289	12,985	64,274	3,579
1992	32,912	10,346	7,143	51,401	13,230	63,631	4,771
1993	34,939	10,540	6,239	51,717	14,210	65,927	3,170
1994	36,730	11,180	6,020	53,930	15,190	69,120	6,237
1995	37,748	12,472	5,092	55,312	16,170	71,482	2,979
1996	38,344	14,015	4,614	57,355	17,444	74,417	3,508
1997	41,713	15,243	4,283	59,263	18,816	80,054	3,906
1998	42,842	16,812	3,993	63,647	19,600	83,247	5,230
1999	41,993	15,916	4,011	61,919	20,286	82,205	5,681
2000P	42,370	16,128	3,872	62,370	20,874	83,244	5,000
Percent change in year							
1983	8.0	-5.7	-0.9	2.2	-3.0	1.0	-30.4
1984	1.5	-6.7	6.9	0.2	-5.0	-0.9	-20.3
1985	-10.3	-22.6	7.1	-10.1	-14.6	-11.0	108.8
1986	-12.0	-26.3	-2.0	-12.9	-19.4	-14.1	9.0
1987	-7.0	-9.0	-2.1	-6.1	-10.1	-6.8	-21.2
1988	2.6	-6.6	-8.7	-2.2	7.7	-0.4	-41.1
1989	3.3	8.9	-15.9	-0.7	4.2	0.2	-41.3
1990	6.9	3.2	-13.5	1.7	4.0	2.2	-16.2
1991	5.1	3.8	-12.4	1.6	1.9	1.7	-18.2
1992	0.2	1.2	-13.0	0.2	1.9	-1.0	33.3
1993	6.2	1.9	-12.7	0.1	7.4	3.6	-33.6
1994	5.1	6.1	-3.5	4.3	6.9	4.8	96.8
1995	2.7	11.6	-15.4	2.6	6.5	3.4	-52.2
1996	1.6	12.2	-9.4	3.7	7.9	4.2	17.8
1997	8.8	8.9	-7.2	3.3	7.9	7.6	11.3
1998	2.7	10.3	-6.8	7.4	4.2	4.0	33.9
1999	-2.0	-5.3	0.5	-2.7	3.5	-1.3	8.6
2000P	0.9	1.3	-3.5	0.7	2.9	1.3	-12.0
Percentage distribution of debt							
1983	42.2	22.1	14.6	78.9	21.1	100.0	
1984	43.2	20.8	15.8	79.7	20.3	100.0	
1985	43.5	18.1	19.0	80.6	19.4	100.0	
1986	44.6	15.5	21.7	81.8	18.2	100.0	
1987	44.5	15.1	22.8	82.4	17.6	100.0	
1988	45.9	14.2	20.9	81.0	19.0	100.0	
1989	47.3	15.4	17.5	80.2	19.8	100.0	
1990	49.5	15.6	14.8	79.8	20.1	100.0	
1991	51.1	15.9	12.8	79.8	20.2	100.0	
1992	51.7	16.3	11.2	79.5	20.8	100.0	
1993	53.0	16.0	9.5	78.4	21.6	100.0	
1994	53.1	16.2	8.7	78.0	22.0	100.0	
1995	52.8	17.5	7.1	77.4	22.6	100.0	
1996	51.5	18.8	6.2	76.7	23.4	100.0	
1997	52.1	19.0	5.4	74.0	23.5	100.0	
1998	51.5	20.2	4.8	76.5	23.5	100.0	
1999	51.1	19.3	4.9	75.3	24.7	100.0	
2000P	50.9	19.4	4.7	74.9	25.1	100.0	

P = Preliminary.

Sources: Board of Governors of the Federal Reserve System, Farm Credit System, Farm Service Agency, U.S. Census of Agriculture Finance Surveys, and U.S. Department of Agriculture farm operator surveys.

Appendix table 4—Interest rates on short- and intermediate-term loans, 1960-2000

Year	Prime rate	12-month T-Bill 1/	Agricultural nonreal estate						Average on out-standing debt 3/
			Commercial banks			Farm Credit System	FSA 2/		
			All banks	Large banks	Other banks		Regular	Limited resource	
Percent									
1960	4.82	NA	NA	NA	NA	NA	5.00	NA	6.58
1965	4.54	NA	NA	NA	NA	NA	5.00	NA	6.38
1970	7.91	6.90	NA	NA	NA	9.45	6.88	NA	7.84
1975	7.86	6.78	NA	NA	NA	9.11	8.63	NA	8.21
1980	15.27	12.00	15.20	16.70	15.00	12.74	11.00	6.82	11.70
1981	18.87	14.80	18.50	19.80	18.10	14.46	14.04	8.13	13.34
1982	14.85	12.27	16.70	16.10	17.00	14.58	13.73	10.75	13.31
1983	10.79	9.58	13.50	12.10	14.10	11.95	10.31	7.31	12.14
1984	12.04	10.91	14.10	13.10	14.40	12.47	10.25	7.25	11.88
1985	9.93	8.42	12.80	11.20	13.40	12.40	10.25	7.25	10.61
1986	8.33	6.45	11.50	9.60	12.10	11.23	8.66	5.66	10.23
1987	8.21	6.77	10.60	9.20	11.30	10.10	8.12	5.27	10.53
1988	9.32	7.65	11.20	10.20	11.60	10.56	9.02	6.02	10.50
1989	10.87	8.53	12.50	12.10	12.70	11.68	9.10	6.10	10.64
1990	10.01	7.89	11.40	10.90	12.30	11.16	8.90	5.82	10.76
1991	8.46	5.86	9.80	9.00	11.30	10.10	8.25	5.00	9.86
1992	6.25	3.89	7.80	6.80	9.40	8.20	6.79	5.00	8.59
1993	6.00	3.43	7.50	6.70	8.70	8.09	5.88	5.00	8.29
1994	7.15	5.32	7.70	7.10	8.75	8.23	6.46	5.00	8.91
I	6.02	3.91	7.20	6.50	8.20	7.46	5.25	5.00	NA
II	6.90	5.13	7.70	6.90	8.60	8.06	6.08	5.00	NA
III	7.50	5.60	7.70	7.30	9.00	8.44	7.25	5.00	NA
IV	8.13	6.60	8.20	7.70	9.20	8.96	7.25	5.00	NA
1995	8.83	5.94	9.50	9.10	10.45	8.89	7.38	5.00	9.56
I	8.83	6.73	10.00	9.70	10.40	9.04	8.25	5.00	NA
II	9.00	5.97	9.40	8.90	10.30	8.96	7.92	5.00	NA
III	8.77	5.65	9.50	9.00	10.50	8.84	6.83	5.00	NA
IV	8.72	5.44	9.20	8.80	10.60	8.73	6.50	5.00	NA
1996	8.27	5.52	8.50	7.80	10.10	8.55	6.58	5.00	9.61
I	8.33	5.12	8.50	7.70	10.00	8.16	6.33	5.00	NA
II	8.25	5.66	8.10	7.40	10.10	8.53	6.17	5.00	NA
III	8.25	5.78	8.60	8.10	10.20	8.75	6.83	5.00	NA
IV	8.25	5.48	8.70	8.00	9.90	8.76	7.00	5.00	NA
1997	8.44	5.63	9.25	8.69	10.03	8.92	6.73	5.00	9.17
I	8.24	5.65	9.10	8.60	9.80	8.94	6.50	5.00	NA
II	8.50	5.85	9.30	8.60	10.10	8.94	6.67	5.00	NA
III	8.50	5.54	9.40	8.90	10.10	8.92	7.00	5.00	NA
IV	8.50	5.48	9.20	8.60	10.10	8.87	6.75	5.00	NA
1998	8.35	5.05	8.95	8.28	9.78	8.59	5.92	5.00	8.89
I	8.50	5.31	9.10	8.20	9.90	8.80	6.25	5.00	NA
II	8.50	5.41	9.20	8.50	9.90	8.58	6.00	5.00	NA
III	8.50	5.09	9.00	8.50	9.90	8.62	6.00	5.00	NA
IV	7.92	4.39	8.50	7.90	9.40	8.41	5.42	5.00	NA
1999	8.00	5.08	8.80	8.15	9.45	8.41	5.63	5.00	8.79
I	7.75	4.67	8.20	7.40	9.40	8.40	5.00	5.00	NA
II	7.75	4.88	8.80	8.10	9.30	8.42	5.25	5.00	NA
III	8.10	5.16	9.00	8.40	9.60	8.50	6.00	5.00	NA
IV	8.37	5.61	9.20	8.70	9.50	8.33	6.25	5.00	NA
2000P	9.23	6.11	9.78	9.38	10.25	9.09	6.73	5.00	8.99
I	8.68	6.19	9.20	8.70	9.80	9.43	6.58	5.00	NA
II	9.25	6.22	9.70	9.40	10.10	9.38	7.00	5.00	NA
III	9.50	6.13	10.20	9.70	10.60	9.27	6.83	5.00	NA
IV	9.50	5.90	10.00	9.70	10.50	8.66	6.50	5.00	NA

NA = Not available. P = preliminary for the Farm Credit System. 1/ Constant maturity. 2/ New operating loans. 3/ Average on outstanding farm business debt. Note: Because of changes in the practices of agricultural lenders over time and differences in the types of loans used to calculate each lender's interest rate series, interest rates across columns and over time are roughly rather than exactly comparable.

Sources: Board of Governors of the Federal Reserve System, Economic Research Service, various Farm Credit District Banks, and Farm Service Agency.

Appendix table 5—Interest rates on long-term loans, 1960-2000

Agricultural real estate								
Year	U.S. Treasury bond 1/	Commercial banks	Farm Credit System	Life insurance companies	FSA 2/		Average on outstanding debt 3/	Average on total farm debt 4/
					Regular	Limited resource		
1960	NA	NA	NA	NA	5.00	NA	5.01	5.79
1965	4.28	NA	NA	NA	5.00	NA	5.36	5.84
1970	7.35	8.27	8.68	9.31	5.00	NA	5.88	6.73
1975	7.99	9.02	8.69	10.03	5.00	NA	6.98	7.55
1980	11.43	13.76	10.39	13.21	11.05	4.82	8.17	9.82
1981	13.92	16.75	11.27	15.42	13.00	5.50	8.91	10.95
1982	13.01	16.63	12.27	15.51	12.94	6.50	9.60	11.31
1983	11.10	13.76	11.63	12.47	10.79	5.27	9.70	10.83
1984	12.46	14.07	11.76	13.49	10.75	5.25	9.41	10.54
1985	10.62	12.96	12.24	12.61	10.75	5.25	8.73	9.57
1986	7.67	11.56	11.61	11.96	9.13	5.06	8.76	9.39
1987	8.39	11.07	11.10	10.21	8.90	5.00	8.94	9.62
1988	8.85	11.42	10.10	10.05	9.46	5.00	9.22	9.78
1989	8.49	12.08	10.93	10.47	9.46	5.00	9.52	10.02
1990	8.55	11.69	10.56	10.25	8.94	5.00	9.58	10.11
1991	7.86	10.76	9.85	10.01	8.73	5.00	8.93	9.36
1992	7.01	9.45	8.25	8.74	8.13	5.00	8.44	8.51
1993	5.87	8.64	7.83	7.64	7.29	5.00	7.75	8.00
1994	7.09	9.20	8.57	8.97	7.42	5.00	7.97	8.41
I	6.07	8.60	7.99	7.89	6.50	5.00	NA	NA
II	7.08	9.08	8.37	8.91	7.17	5.00	NA	NA
III	7.33	9.26	8.70	9.37	8.00	5.00	NA	NA
IV	7.84	9.86	9.21	9.71	8.00	5.00	NA	NA
1995	6.57	9.97	8.95	8.57	7.96	5.00	8.01	8.74
I	7.48	10.22	9.10	9.44	8.75	5.00	NA	NA
II	6.62	10.08	9.10	8.58	8.25	5.00	NA	NA
III	6.32	9.90	8.85	8.39	7.50	5.00	NA	NA
IV	5.89	9.69	8.74	7.87	7.33	5.00	NA	NA
1996	6.44	9.38	8.08	8.13	7.12	5.00	8.14	8.84
I	5.91	9.34	7.88	7.97	6.83	5.00	NA	NA
II	6.72	9.42	8.06	7.99	6.83	5.00	NA	NA
III	6.78	9.40	8.18	8.20	7.33	5.00	NA	NA
IV	6.34	9.36	8.22	8.42	7.50	5.00	NA	NA
1997	6.35	9.38	8.28	8.09	7.23	5.00	7.92	8.52
I	6.56	9.42	8.21	8.06	7.00	5.00	NA	NA
II	6.70	9.50	8.41	8.43	7.17	5.00	NA	NA
III	6.24	9.34	8.25	7.77	7.50	5.00	NA	NA
IV	5.91	9.26	8.23	8.10	7.25	5.00	NA	NA
1998	5.26	9.07	8.13	7.49	6.29	5.00	7.70	8.27
I	5.59	9.18	8.34	7.51	6.58	5.00	NA	NA
II	5.60	9.24	8.35	7.56	6.50	5.00	NA	NA
III	5.20	9.12	8.28	7.47	6.17	5.00	NA	NA
IV	4.67	8.74	7.78	7.42	5.92	5.00	NA	NA
1999	5.65	8.85	7.95	7.82	6.15	5.00	7.62	8.17
I	4.98	8.64	7.65	7.23	5.75	5.00	NA	NA
II	5.54	8.74	7.87	7.51	5.75	5.00	NA	NA
III	5.88	8.94	8.13	8.05	6.33	5.00	NA	NA
IV	6.14	9.09	8.14	8.48	6.75	5.00	NA	NA
2000P	6.45	9.67	8.61	8.50	6.85	5.00	7.83	8.37
I	6.48	9.42	8.61	8.69	7.00	5.00	NA	NA
II	6.18	9.72	8.67	8.55	7.08	5.00	NA	NA
III	7.56	9.76	8.67	8.33	6.83	5.00	NA	NA
IV	5.57	9.77	8.52	8.43	6.50	5.00	NA	NA

NA = Not available. P = preliminary for commercial banks and the Farm Credit System. 1/ 10-year constant maturity. 2/ New farm ownership loans. 3/ Average on outstanding farm business debt. 4/ Both real and nonreal estate loans. Note: Because of changes in the practices of agricultural lenders over time and differences in the types of loans used to calculate each lender's interest rate series, interest rates across columns and over time are roughly rather than exactly comparable.

Sources: Board of Governors of the Federal Reserve System, Economic Research Service, various Farm Credit District Banks, and Farm Service Agency.

Appendix table 6—Selected financial indicators for the four institutional farm lender categories, 1984-2000

Lender and date 1/	Delinquent loans 2/	Share of portfolio 3/	Net loan charge-offs	Share of portfolio 4/	Value of acquired property 5/
Farm Credit System 6/	<i>Million dollars</i>	<i>Percent</i>	<i>Million dollars</i>	<i>Percent</i>	<i>Million dollars</i>
1984	5,689	8.7	428	0.5	496
1985	6,465	9.7	1,105	1.4	928
1986	8,137	9.4	1,321	1.9	1,093
1987	5,749	11.6	488	0.8	873
1988	3,757	7.3	413	0.8	661
1989	2,812	5.5	-5	0.0 7/	461
1990	2,758	5.4	21	-0.0 7/	344
1991	2,420	4.7	47	0.1	409
1992	2,015	3.8	19	0.0	314
1993	1,488	2.8	-2	-0.0 7/	187
1994	1,067	2.0	-26	-0.0 7/	100
1995	830	1.4	-5	-0.0 7/	59 8/
1996	673	1.1	48	0.1	50 8/
1997	628	1.0	27	0.0	29 8/
1998	1,246	1.8	68	0.0 7/	31 8/
1999	984	1.4	172	0.2	20 8/
2000	971	1.3	68	0.1	23 8/
Farm Service Agency 9/					
1984	5,086	19.9	117	0.5	NA
1985	5,826	20.8	234	0.9	638
1986	6,277	22.8	379	1.4	758
1987	6,592	25.6	1,119	4.1	777
1988	8,322	33.2	2,022	7.8	633 10/
1989	8,006	34.4	3,229	12.9	609
1990	6,139	31.4	3,142	13.5	474
1991	5,508	31.5	2,237	12.5	404
1992	4,805	30.9	1,824	11.0	382
1993	4,116	29.9	1,702	12.0	344
1994	3,570	28.3	1,353	9.8	298
1995	3,199	27.8	1,003	7.9	262
1996	2,420	22.9	1,298	11.3	243
1997	2,036	20.7	756	7.1	175
1998	1,692	18.5	674	6.9	119
1999	1,398	15.6	518	5.7	94
2000	1,178	13.6	473	5.3	73
Commercial Banks 11/					
1984	1,244	3.1	901	2.2	224
1985	2,384	6.6	1,366	3.8	336
1986	2,033	6.4	1,257	4.0	440
1987	1,506	5.1	540	1.8	453
1988	1,060	3.5	142	0.5	416
1989	767	2.5	98	0.3	385
1990	653	2.0	56	0.2	340
1991	695	2.0	138	0.4	341
1992	666	1.9	92	0.3	412
1993	557	1.5	60	0.2	247
1994	466	1.2	74	0.2	173
1995	493	1.2	63	0.2	149
1996	577	1.4	109	0.3	132
1997	541	1.2	78	0.2	94
1998	604	1.3	100	0.2	67
1999	651	1.5	144	0.3	81
2000	660	1.4	64	0.1	69

Appendix table 6—Selected financial indicators for the four institutional farm lender categories, 1984-2000—continued

Lender and date 1/	Delinquent loans 2/	Share of portfolio 3/	Net loan charge-offs	Share of portfolio 4/	Value of acquired property 5/
	<i>Million dollars</i>	<i>Percent</i>	<i>Million dollars</i>	<i>Percent</i>	<i>Million dollars</i>
Life Insurance Companies					
1984	1,167	9.6	NA	NA	NA
1985	1,717	15.1	NA	NA	692
1986	1,783	17.0	NA	NA	1,442
1987	1,330	14.3	NA	NA	1,619
1988	808	8.9	NA	NA	1,226
1989	426	4.7	NA	NA	1,110
1990	404	4.2	NA	NA	569
1991	364	3.8	NA	NA	413
1992	277	3.3	NA	NA	321
1993	196	2.2	NA	NA	135
1994	230	2.6	NA	NA	47
1995	250	2.7	NA	NA	128
1996	91	0.9	NA	NA	97
1997	98	1.0	NA	NA	7
1998	154	1.4	NA	NA	10
1999	103	0.8	NA	NA	14
2000	182	1.5	NA	NA	23

NA = Not available. 1/ Farm Credit System: December 31, 1984-99 and September 30, 2000; Farm Service Agency: September 30, 1984-2000 (end of the Federal Government's fiscal year); and commercial banks and life insurance companies: December 31, 1984-99 and June 30, 2000. 2/ Includes: for commercial banks and the Farm Credit System, loans past due 90 days or more and still accruing interest plus loans in nonaccrual status; for the Farm Service Agency only principal and interest payments more than 15 days past due; for insurance companies, loans past due 90 days or more plus those in process of foreclosure. 3/ As a percentage of all such loans held at the end of the period. 4/ As a percentage of all such loans held at the beginning of the period (end of the period for banks). 5/ Value of agricultural property acquired as the result of agricultural loan defaults and foreclosures. For commercial banks for 1984-91, the values were calculated by computing for each bank the ratio of outstanding farmland real estate loans to total outstanding loans and multiplying these ratios by the other real estate owned. Beginning in 1992 a direct measure of farmland owned is reported in the bank Call Reports. For the Farm Credit System, excludes property held by the Banks for Cooperatives. 6/ 1984 figures are not exactly comparable because this was a transition year to new accounting principles. Also, Farm Credit System guidelines changed in 1990. 7/ Less than 0.05 percent. 8/ Does not include the CoBank Agricultural Credit Bank (ACB) or the St. Paul Bank for Cooperatives, although CoBank now services several Agricultural Credit Associations (ACA's) which are direct farm lenders. 9/ Includes only data for direct Farmer Loan programs at the end of the fiscal year. Net loan charge-offs are for the fiscal year ending September 30. 10/ Decrease from the previous period may reflect changes in reporting procedures. 11/ Delinquency and charge-off data for bank-held farm nonreal estate loans were reported by institutions holding most of the farm loans in this lender group. Data shown are computed just for these reporting banks. Beginning in December 1987, charge-offs do not include losses qualified for the loan deferred loan loss program.

Sources: American Council of Life Insurance, Board of Governors of the Federal Reserve System, Farm Credit System, and Farm Service Agency.

Appendix table 7—Trends in the numbers of Farm Credit System Associations, 1983-2001

January 1	Federal Land Bank Associations 1/	Production Credit Associations 2/	Agricultural Credit Associations 3/	Federal Land Credit Associations 4/	Total
	<i>Number</i>				
1983	474	421	0	0	895
1984	462	399	0	0	861
1985	436	362	0	0	798
1986	306	216	0	0	522
1987	232	155	0	0	387
1988	232	145	0	0	377
1989	154	94	33	0	281
1990	146	84	40	2	272
1991	120	111	44	18	293
1992	85	72	70	23	250
1993	77	70	69	27	243
1994	73	69	66	30	238
1995	71	69	60	32	232
1996	70	66	60	32	228
1997	60	65	61	31	217
1998	48	64	60	31	203
1999	39	63	54	33	189
2000	17	57	49	49	172
2001	0	28	67	38	133

1/ Farm Credit Banks (FCB's) make direct long-term agricultural loans secured by farm real estate through FLBA's, provide wholesale loan funds to direct lending associations: Production Credit Associations (PCA's), Federal Land Credit Associations (FLCA's), Agricultural Credit Associations (ACA's), and other financing institutions (OFI's). 2/ Production Credit Associations have direct lending authority to make short- and intermediate-term loans to retail customers with funds obtained from FCB's. 3/ Agricultural Credit Associations have direct lending authority to make short-, intermediate-, and long-term loans to retail customers with funds obtained from FCB's or the CoBank Agricultural Credit Bank. Beginning in the year 2000, nine of the ACA's have PCA and FLCA subsidiaries. 4/ Federal Land Credit Associations have direct lending authority to make long-term real estate loans to retail customers with funds obtained from FCB's.

Source: Farm Credit Administration.

Appendix table 8—Commercial bank real estate lending, by type of bank, June 30, 2000

Bank group	Commercial banks	Real estate loans/total loans	Nonperforming real estate loans/total real estate loans 1/	Total nonperforming loans/total loans	Nonperforming real estate/nonperforming loans	Weak banks 2/
	<i>Number</i>		<i>Percent</i>			<i>Number</i>
All banks	8,394	43.9	0.8	1.0	33.9	4
Agricultural	2,842	51.0	0.9	1.0	44.4	0
Small nonagricultural	4,900	65.7	0.6	0.8	52.1	4
Large nonagricultural	652	40.9	0.8	1.0	31.7	0
Urban	3,777	42.8	0.8	1.0	33.5	3
Rural	4,617	54.4	0.8	1.1	36.7	1

1/ Nonperforming loans are loans that are past due 90 days or more and still accruing interest plus loans in nonaccrual status. 2/ Weak banks are banks with total nonperforming loans in excess of total capital.

Source: Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Appendix table 9—Banks reporting nonperforming loans greater than capital, 1986-2000 1/

Year 2/	Agricultural banks		Nonagricultural banks		Total banks	
	Number	Percent	Number	Percent	Number	Percent
1986	154	3.27	247	2.63	401	2.84
1987	84	1.87	259	2.84	343	2.52
1988	55	1.26	239	2.75	294	2.25
1989	30	0.72	185	2.19	215	1.70
1990	15	0.37	133	1.62	148	1.21
1991	10	0.25	106	1.34	116	0.98
1992	6	0.16	56	0.74	62	0.54
1993	2	0.05	30	0.42	32	0.29
1994	2	0.06	19	0.28	21	0.20
1995	4	0.12	6	0.09	10	0.10
1996	5	0.15	4	0.06	9	0.09
1997	3	0.10	4	0.07	7	0.08
1998	2	0.07	6	0.10	8	0.09
1999	0	0.00	4	0.07	4	0.05
2000 2/	0	0.00	4	0.07	4	0.05

1/ Nonperforming loans are loans that are past due 90 days or more and still accruing interest plus loans in nonaccrual status. Total capital includes total equity capital, allowance for loan and lease losses, minority interest in consolidated subsidiaries, subordinated notes and debentures, and total mandatory convertible debt. 2/ The 2000 numbers are as of June 30, all others are December 31.

Source: Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

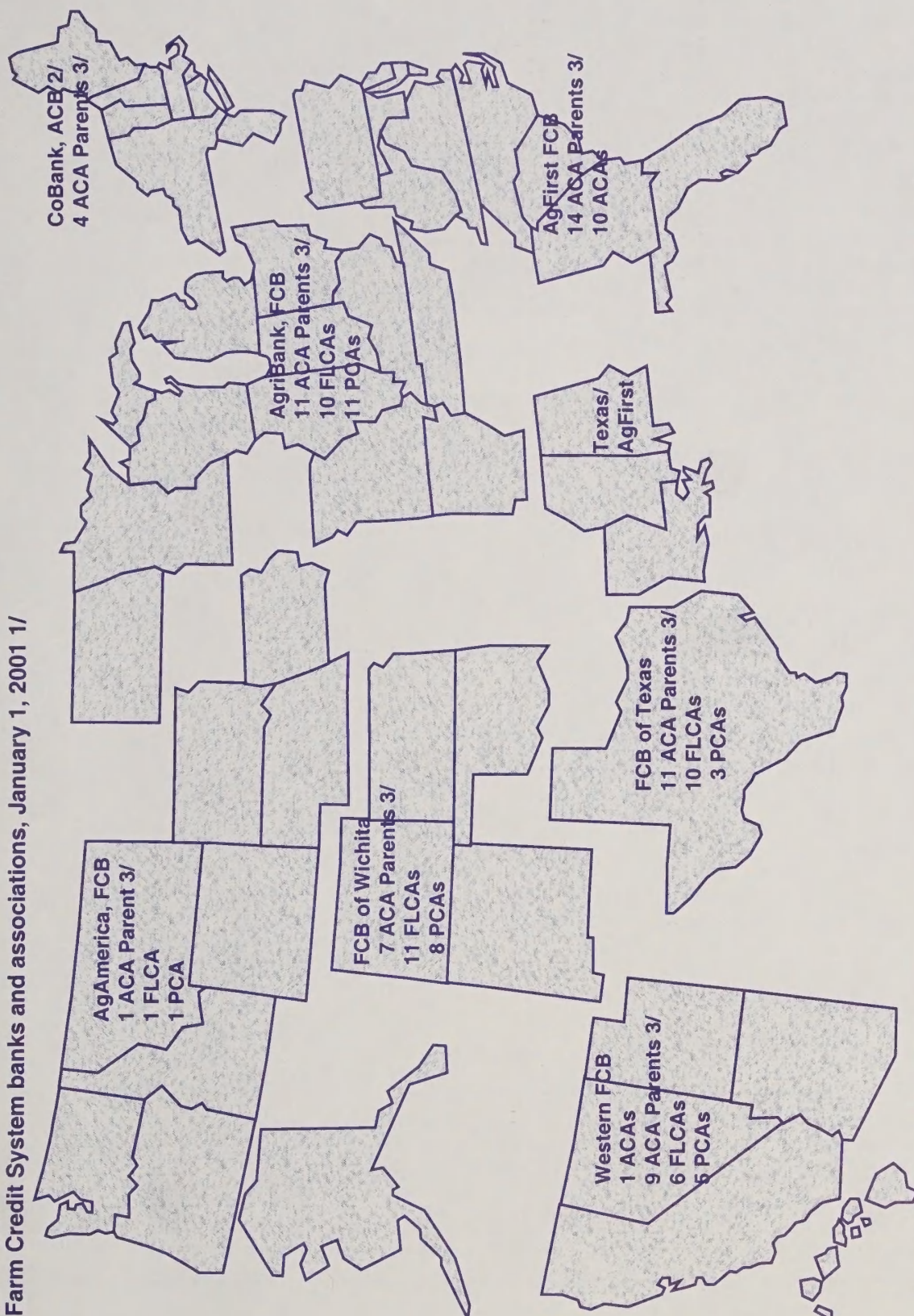
Appendix table 10—Commercial bank failures, 1982-2000 1/

Year	Agricultural banks		Nonagricultural banks		Total banks	
	Number 2/	Percent 3/	Number	Percent 3/	Number	Percent 3/
1982	10	0.19	23	0.25	33	0.23
1983	7	0.14	37	0.40	44	0.31
1984	31	0.62	47	0.50	78	0.54
1985	69	1.42	49	0.52	118	0.83
1986	66	1.41	78	0.84	144	1.03
1987	75	1.67	127	1.41	202	1.50
1988	41	0.95	180	2.09	221	1.71
1989	22	0.53	184	2.18	206	1.63
1990	18	0.44	141	1.76	159	1.30
1991	10	0.25	98	1.24	108	0.91
1992	7	0.18	93	1.23	100	0.88
1993	3	0.08	33	0.46	36	0.33
1994	0	0.00	11	0.16	11	0.11
1995	0	0.00	5	0.08	5	0.05
1996	2	0.06	3	0.05	5	0.05
1997	1	0.03	0	0.00	1	0.01
1998	1	0.03	2	0.03	3	0.03
1999	1	0.03	6	0.11	7	0.08
2000 4/	0	0.00	4	0.07	4	0.05
Total	364	NA	1,121	NA	1,485	NA

NA=Not available. 1/ Counts of failures exclude mutual savings banks, savings and loan associations, commercial banks not insured by the FDIC, and banks headquartered in U.S. possessions and territories. Failures are those declared insolvent and closed by their chartering authorities plus those granted open bank assistance by the FDIC. 2/ Agricultural bank status is based on June loan data from the year prior to the bank's failure. 3/ Failures during the year as a percentage of total banks of this type remaining at the end of the year. 4/ Percentages for 2000 use June 30, 2000, data on numbers of banks in the denominators.

Sources: Calculated from information provided by the Federal Deposit Insurance Corporation and the Report of Condition and Report of Income files, Board of Governors of the Federal Reserve System.

Farm Credit System banks and associations, January 1, 2001 1/



1/ Associations affiliated with Texas, FCB, include two PCAs in New Mexico, two FLBAs in Alabama, two FLBAs in Mississippi, and two FLBAs and one PCA in Louisiana. Associations affiliated with Western, FCB, include one PCA in Idaho. Associations affiliated with AgFirst, FCB, include one ACA in Ohio, two ACAs in Kentucky, one ACA in Tennessee, and one PCA serving Alabama, Mississippi, and most of Louisiana. As of March 1, 1997, the Western and AgAmerica FCBs are jointly managed but remain separate legal entities. 2/ CoBank ACB serves cooperatives nationwide and ACAs in the indicated area. 3/ Designates ACAs that have PCA and FLCA subsidiaries.

Source: Farm Credit Administration, Office of Policy and Analysis, Risk Analysis Division records.



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